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THE

PHILOSOPHICAL REVIEW.

THE SOCIAL SIGNIFICANCE OF EDUCATION.[1]

AS we look forward to the work of educational reconstruction that must follow the establishment of peace we may congratulate ourselves that evolutionary science has furnished educational theory with solid foundation stones of biological fact. Not yet have we exhausted the implications of that elementary yet profound truth that consciousness has arisen and developed as an instrument of organic adjustment and adaptation. And if under the spell of this revealing truth thinkers of the present generation have been tempted to an illegitimate use of the categories of biology in explanation of the processes of social life and development, as the following argument tends to show, that does not in the least detract from the importance and value of the scientific fact in question.

In particular we have gained from evolutionary science a new understanding of the processes of perception. To this subject I wish to direct attention at the start because I believe that an examination of the content of perception in its earlier and simpler phases affords us a clue to distinctive features of the social consciousness which are often overlooked. That perceptions are originally anticipations of action is a fact upon which all at present agree. Arising when habitual responses prove inadequate, they prefigure motor adjustments that promise to result in experiences which in the past have been found satisfactory. The conflict between the actual motor adjustments of the living individual and the incipient responses to new stimuli produces a tension which is consciously reflected

[1] Read as the Presidential Address before the Western Philosophical Association, April, 1919.

in certain perceptual qualities projected into an object possessed of a definite location with reference to the agent. The perceived object is therefore the projected fulfillment of responses elicited by stimuli, in its location mapping out the movements required for approach and appropriation, in its qualities anticipating the satisfaction it is capable of yielding when appropriated. The tension out of which the perception arises is relieved by the initiation of the pre-figured movements which in their turn bring the actual motor adjustments of the organism into harmony with the ideal possibilities of its situation. The result is that the movements at the command of the organism become such as to sustain and to reinforce, rather than to impede or exclude, the experience of those qualities which past experience has proved to be desirable.

The subservience of perception to demands of motor readjustment appears upon examination to be so detailed and complete that one is tempted in the interests of simplicity to reduce all qualitative differences that enter into it to terms of varying motor response.[1] Explanations of this sort, which reduce differences of conscious quality to terms of organic behavior, are at present being offered and claim the merit of replacing subjective differences, that are known only to the introspection of the individual, with a detail of objective change experimentally verifiable. Each perceptual quality is said to be, without exception, an anticipation of results of motor responses while these are still incipient: not only is this true of tactual qualities; it also holds of colors and sounds, and even of differences of aesthetic and intellectual value. Undoubtedly this explanation covers a large body of fact, but it fails of completeness; because the selectiveness which even behaviorists admit to be an essential feature of perception depends altogether upon the existence and accentuation of qualitative differences within the perceiving consciousness.[2] It is indeed true that if

[1] I have in mind here the recent writings of Professor Bode which contain a particularly able exposition of behaviorism interpreted in the light of pragmatist principles. Cf. Bode, "Nature of the Psychical," *Jour. of Phil.*, XIV, No. 11, pp. 290–291. *Creative Intelligence*, 1917, pp. 240 f.

[2] Professor Bode's theory seems to me to fail at this point and to be open to the criticisms that follow.

the organism is to be released in its responses from the rigidity of mechanical repetition it must be able to anticipate the results of incipient and alternative modes of action before they become overt. But this is necessary because it affords the conditions for selecting that one among the conflicting incipient responses which promises most effectually to meet the needs of the situation. And selection is actually made, never among varied motor sequences and systems, but always among qualities different in content or character. The images which in ordinary perception supplement the original sensations serve to distinguish or classify it as furnishing this or that characteristic satisfaction. Through the selections which it makes among the qualitatively different satisfactions offered by the environment, the organism asserts and develops individuality.

Thus it appears that the qualitative diversity of the content of perception is not explained away or rendered unimportant by recently acquired knowledge of the original subservience of perceptive processes to the demands of action. Instead we see plainly that perception could discharge its function of facilitating adjustment only through the increase and accentuation of differences that may correctly be called subjective or internal. Among the endlessly differing complexes of sense qualities a noteworthy difference exists—a difference to which I wish to give prominence because of the part it plays in the development of the social consciousness. The core of most, perhaps of all perceptions before intelligence by the aid of symbols accomplishes its work of reconstruction, is constituted by those qualities which reflect the satisfaction of the principal organic appetites. Now in addition to these central qualities, which along with associated kinæsthetic sensations and imagery reflect primary organic satisfactions, are three sensory complexes to which I wish to give special consideration. I will first enumerate them and then indicate by what common attributes they differ from the perceptual experiences first mentioned. The sensory complexes in question are: first, those of color and sound in association with kinæsthetic sensations aroused by adjustment of the apparatus of seeing and hearing;

second, those of vocal sound and speech associated with sensations of movement in the vocal apparatus; and, third, those aroused by effort to grasp, manipulate and fashion in close association with visual sensations picturing the active member, which in the case of the apes and men is of course the forearm and hand. These three perceptual complexes differ in two important ways from the organic satisfactions imagined or perceived, to which value primarily attaches. They are, in the first place, more directly within the control of the living individual, since the movements required to arouse or confirm them are always at his command and usually do not depend upon the possession of an external object; secondly, they have when aroused a place in the world common to the percipient and the other members of his species. They are thus peculiarly well-fitted to serve as commonly employed signs or symbols of experiences and satisfactions which are confined to the inner and private experience of individuals. This is most evident in the case of colors, shapes, and many sounds (and frequently of odors). Stimulation of the distance receptors evokes an initial interpretation in terms of visual or auditory quality; such initial interpretation is tested by instant adjustments of sensory apparatus which serve to prove the existence of qualities of color and form and sound that signify, in advance of more extensive movements, the bearing of the object upon the welfare of the organism. The possibility of producing a wide and increasing variety of sounds by the movements of vocalization leads to the formation of a second sensory complex of an indicative or symbolic character. Vocal and, in the course of development, verbal sensations or images are of an auditory motor character and serve as signs of objects either by identifying them in the experience of the individual or by securing confirmation through a like sound produced by another individual. The third of the sensory complexes enumerated consists of visual and kinæsthetic sensations which are aroused by the movements of touching, pushing, and finally of grasping and manipulating objects. These movements are originally of an experimental character. They show themselves in the different attitudes or postures habitually

taken toward various objects, which attitudes and postures come in time to signalize somewhat as gestures the presence of their objects. Such movements, along with the sensory complex they produce, do not of course attain great importance until the exact posture permits the evolution of arm and hand. The point to be noted in the case of these three complexes is that all three serve originally as signs or indices of expected organic satisfactions and that all have for purposes of verification their own action systems.

While the power of selective emphasis or attention which reveals itself in perception marks the rise of individuality in the life-series, it is true that the processes of perception in animals are explainable in the main along strictly biological lines. This power of self-determination or conation, as one may wish to call it, is the conscious reflection of the instinct or impulse to survive, and, although it does choose between satisfactions qualitatively different, it seeks in all those choices the objects that favor the continuance of the natural life process. Since all values are thus modes of survival-value, it seems not unreasonable to explain all differences of meaning in terms of organic response and adjustment. Thus not merely the taste but the shape and color and odor of an article of food seem in truth to mean the nutritive processes which the food sets up and the continued vital activities to which it leads. The organism shows power of self-determination or character of individuality only in the choice of means by which it realizes its predetermined end.

The human individual is impelled by physical heredity to seek much the same organic satisfactions as the animals. But human conduct differs radically from animal action because man's intelligence enables him to make a new use of these three sensory complexes, formed as we have seen in the animal consciousness, but transmitted by processes of social heredity to the human individual in the form of language, technical invention and art. Man utilizes these three types of imagery, which with the animal remain signs of organic satisfaction, to symbolize and communicate experiences after they have been reorganized by, and

thus made expressive of, the unity of his own rational will. The functioning of the same power of self-conscious intelligence in all normal human individuals, which brings or strives to bring all experiences into relation with its own synthetic unity, imposing as it does the same rules or conditions of intelligibility upon the consciousness of all, makes all men capable of sharing the same experiences. Now in order that experiences thus become intelligible to individuals should be made the common possession of humanity, and thus the matter of truly social intercourse, they must be communicable, and this requires adequate media of communication. Such media to be effective must be capable of symbolizing the intelligent meaning of experience both in the consciousness of the individual who originally comprehends them and in the outer world where they are open to the perception of others. Precisely this is accomplished by the three types of imagery in question: they furnish symbols which are always ready for employment by the consciousness of the individual because depending upon motor adjustments at his command, and which also possess physical existence in the world of common perception, where they are open to the interpretation of those who have intelligence to understand them and may be preserved as permanent embodiments of rational meaning in the possession of human society. Thus I believe language and literature, technical inventions and art should be understood—as the embodiment for purposes of social transmission of experiences of a human individual so reorganized by the rational will he possesses in common with all others that they are rendered generally intelligible and hence valuable for all. Rational discourse presents experiences in such generally valid relationships as to make them experienceable by all individuals; it is a medium for the interchange of objective experiences. Technical invention or skill exhibits the ability of intelligence to control natural forces in the interest of purposes which because rational have universal value for others as well as the agent; the use of the same methods and appliances makes men aware of the coöperation of others, and thus of receiving from the team-play of industry an enlargement of their own sense of personal power. Objects

of beauty, natural and artistic, serve to symbolize and transmit experiences which, although inarticulate, are profound in their emotional effects and, although subjective in a sense, have general significance because they grow out of common features in the human situation. Now, since these three activities are all of them means and media of intersubjective intercourse, they are evidently supremely important for social life and development. Indeed it is my contention that the development of the distinctively social life demands that natural existence itself be made subservent to the enlargement and extension of these personal satisfactions which spring from the use of language, the employment of technical skill and the appreciation of beauty.

I wish further to show that any plan of education which has in mind the development of social intelligence must aim primarily to increase the power of these capacities of verbal expression, technical invention and æsthetic appreciation, to expand and enrich the personal consciousness of man and, above all, to avoid treating the activities in question as instruments of biological adjustment. Since my conclusions in regard to education derive what force they possess from the fact, as I take it, that neither language nor invention nor art can be explained except as expressions of the one universalizing reason at work in the minds of men, may we consider a little further each of these departments of human culture?

The chief purpose of language as used by man is not to express the emotions of individuals or to point out the particular objects an individual may perceive. Such denomination by individuals of subjective states and objective incidents doubtless had survival value in making concerted action possible. But in civilized human life words are primarily symbols of qualitatively distinct experiences, open to the consciousness of men universally, and of the permanent relations which these generally distinguishable experiences or elements of experiences sustain. This development of language in human association presupposes both a power of subjective analysis and recombination continuing with self-consistency through individual experiences, and also the ability of individual minds to share a system of universally

verifiable and therefore valid meanings. To the use of language is largely due, it must be acknowledged, the remarkable development of intelligence in man; yet the use of language by men would have been altogether impossible if they had not all been participants in one rational order. It is a fact that through the aid of speech the human individual, without it confined to the more or less haphazard world of his own perceptions and imaginings, comes into conscious possession of an orderly system of significant objects realizable under uniform conditions and offering socially authenticated ranges of possible satisfaction. But it is equally true that he can enter and engage in this world of rational discourse only if the principles by which it is constituted answer to demands of his own consciousness, only if his own will demands of its world uniformity of action, consistency of character, and continuity of growth. The fact that man, developing as man, comes more and more to think and act in this social world of reasoned discourse rather than in that of his private perceptions and fancies, proves that the principles on which it is based are essential to the human mind itself. The requirements of uniformity and consistency are all of them based upon the unity of the human self and give expression to the demand of the human will for an extension of this unity. The so-called laws of thought, of the common reason that unites us and makes verbal communication in the true sense possible, pertain to and are explainable only in terms of the internal organization of the self. The attempt to explain the permanent significance and social acceptance of the system of meanings by referring them to a uniformity of response due to individual habit or race instinct is predestined to failure. For, in the first place, the responses in question which have become habitual depended originally upon selective attention, and this activity presupposes the very distinctions in meaning which are reducible, it is claimed, to differences in instinctive response. And, secondly, mutual understanding among individuals is made possible, not by the inheritance of similar speech-tendencies, but by constant verbal communication; and this produces general agreement only because the individuals who communicate are subject to the same logical requirements of self-consistency.

The world of rational discourse is an ideal world in the sense that its objects are not objects as originally perceived, but rather perceptual experiences reorganized and thus made to reflect the unity of rational will working in the social consciousness of man. This ideal order of objects affirmed to be real or realizable by human intelligence is the concrete universal of which the idealist speaks, often without being understood.[1] It is in truth the real world if the social intelligence of man has not entirely missed its aim. But to say this is by no means to assert the existence of an intellectual realm, a world of pure ideas divorced from actuality and remote from the concerns of practical life. On the contrary, ideas even when they are rational constructions continue to be, in a certain sense, *ends*,—that is, they point to action. *Qua* ideas, they are possibilities of realization; the source of the opposition between idea and actuality is the tension between end and existence which arises in the course of voluntary action. But all ideas do not aim at overt action, at least not at such movement as seeks to modify or transform the physical environment. For thought, although originally a function of conduct, acquires in the course of human development a certain independence as a field within which voluntary activity, with its distinction between end and realization, takes place. In the development of this purely intellectual interest, language plays an important part; indeed, it is no exaggeration to say that it is the speech mechanism which makes possible the coöperative pursuit and realization by mankind of the ideal of truth. Truth as an end aims at the expansion of the system of ideal meanings to include all objects possible of realization. Ideas are constructed, hypotheses formulated, with the intent of adding to the sum of knowledge. The truth of these ideas may be tested directly by action which essays to realize them—most effectively, of course, by action under experimental control. But, more frequently, we verify the theories we adopt by ascertaining their consistency with the socially accepted body of knowledge. This is made possible by the speech mechanism, a motor system largely within our control, which we operate with a near approach to freedom.

[1] Professor J. E. Creighton has given us an exposition of this type of idealism notable for its lucidity and completeness. PHIL. REV., Vol. XXVI, p. 514.

We put our supposition in words and communicate it to another, if it is by word of mouth, adjusting our auditory apparatus to the expected reply. In many, perhaps more, cases we hold conversation with ourselves, so stating our chosen idea that its agreement (or disagreement) with the system of propositions whose meaning has been verified by our own experience or that of the race shall be made apparent. It is noteworthy that the procedure here is in every essential that of voluntary action. An idea, usually symbolized by a verbal image, is selected for realization; it is acted upon by a series of motor adjustments; it is verified if the result of action is to establish and illuminate the meaning of the idea by giving it part and place in the system of accepted meanings; it is not realized but rather disproved if the resultant movements introduce conflict into the field of discourse and thus signalize the inconsistency of the proposed theory with the body of verified fact.

An understanding of the importance of the fact just alluded to, that all ideas are verified by actions, even those which aim at no alteration of environmental conditions but only at an enlargement of the system of knowledge, and are consequently accompanied by no overt or visible movement, leads sometimes to the further conclusion that logical consistency, which we accept as a criterion of truth in our thinking, is reducible to a harmony of motor responses, and logical contradiction to a conflict of movements.[1] This is so serious an error that it is worth while to see just how it arises. An idea is verified in the field of thought by giving it statement in words and thus ascertaining its conformity with that body of discourse which gives verbal expression to the system of verified knowledge. This conformity is determined by the application of conventional grammatical rules whose observance has become unconscious through habit. Such a rule is that two contradictory predicates cannot be applied to the same subject. Now this familiar procedure of systematic thought is fully explained, in the opinion of certain writers, as an instance of the universal pragmatic verification of an idea by

[1] Professor Margaret Floy Washburn furnishes us with a good example of this: *cf.* the (apparently) orthodox pragmatist interpretation of logical contradiction in her *Movement and Mental Imagery*, pp. 130 ff., 179 ff., 219 ff.

movements which proceed unimpeded by, and in harmony with, other motor adjustments, already established because favoring the well-being of the organism; or its exposure as false through the initiation of movements which conflict with, and block, other responses necessary to adjustment and survival. But such an explanation, when applied to thinking, mistakes symbol for thing symbolized, shadow for substance. The verbal formulas employed are signs which indicate whether is fulfilled or not that demand for consistency which is rooted in the unity of rational will, whose fulfillment or non-fulfillment is the object of direct logical insight.

It is true, we may freely admit, that when two qualities are ascribed to an object which arouse or anticipate conflicting movement this is often, perhaps generally, a sign of their contradictoriness. But it is not in this that their contradictoriness primarily or properly consists. That is rooted in the fact that a conscious subject which preserves its own identity in its choices cannot will at once to realize and not to realize the same quality; for to affirm along with any quality a second whose realization is known to interfere with or prevent the realization of the first is *ipso facto* to negate the realization of the first. No doubt—to illustrate—the qualities honest and dishonest anticipate different and conflicting courses of conduct. Yet it is a trifle absurd to find the explanation of their contradictoriness in the conflict between the motor responses of predicating the two different adjectives of one subject-term, or, in overt action, of opening my purse and taking out a five dollar note a man has asked me to lend him and of closing my purse and buttoning my coat. No, the two qualities are contradictory. I cannot in self-consistency choose to follow the two different and mutually exclusive courses of action at the same time and with reference to the same subject or person. Nor is this tantamount to asserting that, in the case of thinking at least, the 'motor discharge' is accidental and superfluous; that would be to fall into an error opposite to that we have been criticizing. Language plays an indispensable part in our thought which is always and essentially social, inasmuch as by verbal expression and by that alone can

the experiences of individuals be made permanent and communicable possessions of mankind, and thus a cumulative social effect be given to the insights of successive generations of human individuals.

The construction of a socially accepted system of knowledge by the aid of the speech mechanism is an impressive instance of how within the continuity of biological process new powers appear whose activity is not completely explainable in terms of the biological categories of stimulus, response, and adjustment; for while the relation between selected idea and motor discharge conforms in outward order to the biological pattern, it is a virtual reversal of this because thought is not really (as the order of events might seem to indicate) instrumental to motor response or resulting adjustment. Instead, the movements elicited turn out to be themselves instrumental to the building up of a system of ideas or ideal objects which express to the individual what is significant in the experience of his fellow-men. Within the consciousness of individuals is created or re-created the world of universal social life and achievement, in which all objects that have proven generally realizable directly or indirectly, all events that are capable under prescribed conditions of being reëxperienced, are interwoven by relations, mechanical and teleological, into something approaching unity. The humanly significant result achieved by the habits of speech, spoken and written, that we have been considering, is not organic adjustment but intellectual insight, spiritual vision. The noble function that language may discharge is eloquently set forth in a recent presidential address by Professor Gilbert Murray. *Grammata*, letters, the poetry and philosophy that come down to us from our fathers enshrine their living thought and feeling. The scholar's special duty is to interpret the *grammata* and so to re-live and to enable others to re-live the chosen moments of human life wherever they are recorded.

"The *traditio*, the handing down of the intellectual acquisitions of the human race from one generation to another, the constant selection of thoughts and discoveries and feelings and events so precious that they must be made into books, and then

of books so precious that they must be copied and recopied and not allowed to die—the *traditio* is itself a wonderful and august process, full no doubt of abysmal gaps and faults, like all things human, but full also of strange half-baffled and yet not wholly baffled, splendor, which marks all the characteristic works by man."[1]

Civilized man receives by social inheritance besides language all the mechanical appliances and technical devices that have been invented or discovered to augment his powers of action in the fields of industry, commerce, government, household management. Each of these tools and instruments, machines and methods, requires for its use a certain practice and skill. Civilized man learns in his youth to employ many of them effectively with the result that ideas of these instrumentalities, in close association with the motor adjustments they elicit, are an important constituent of his consciousness. Now such mechanical devices seem at first thought merely to extend man's power of action in the physical world and thus to make it possible for him to live more safely and comfortably. Such increase of our mechanical efficiency, while very useful, has, it may appear, no personal or social value: its end is admittedly physical adjustment, to be rated, at very highest, in terms of survival value. Such has been the prevailing view. Professor Murray, who eulogizes letters because they embody and preserve the significant and precious in human experience, sees no value in modern technical art beyond temporary utility. But my belief is that mechanical industry to a great extent is, and to a much greater extent may be made, the source of experiences of coöperation and team-play which contribute to the enrichment of social life an element that nothing else can supply.[2]

The first tools were of course objects of nature, but chosen because of a dim perception of the requirements of this or that human purpose. Their shaping and improvement were due to an

[1] *Century*, June, 1918, p. 171.

[2] Professor Judd in his article on "Evolution and Consciousness" brings out in a striking way the significance of tools and appliances as objective embodiments of ideas which recreate the environment within the individual. *Psych. Rev.*, Vol. 17, p. 77.

increasingly clear consciousness of the ideal requirements of such instrumentalities and a comparison of different objects with these standards in mind. The distinguishing between shape and material and an investigation of the different possibilities in each case enabled men to standardize the processes of manufacture in accordance with the dictates of the ideal pattern. The finished tool or appliance is consequently the result of an analysis of the different natural forces and agencies that promise to contribute to the realization of a human purpose and their recombination in such manner as to serve most efficiently this end. These instrumentalities embody methods of procedure universally effective, because depending upon a selection from among the conditions of action of those factors essential to the realization of an intelligible human purpose; they represent the reorganization of natural forces by the power of creative intelligence at work in human society. Hence the individual in all stages of development who learns to use the tools, weapons, and appliances of his people receives from their employment a greatly augmented sense of power coming not merely from the increased control gained over natural forces, but also from the coöperative alliance with his fellows in the prosecution of identical purposes.

The fact that I wish to emphasize is that the whole machinery of industrial activity and social intercourse which is handed down from one human generation to the next, just because it represents the conquest of nature by an intelligence in which we all share, may be productive of experiences of comradeship in effort, of associated enterprise, which have highest ethical significance. The perfecting of tools and appliances in any department of industry means the establishment of a uniform procedure, a regular technique. This in its turn favors concerted action on the part of individuals: many forms of labor become communal. Wundt tells how the use of the hoe has been in many primitive tribes the source of a cult of community-labor. Hoe-culture carried on by many individuals in adjacent fields at the same season of the year and with the common purpose of securing the harvest is quickened by the thrill of comradeship: a certain rhythm and tempo are observed along with accompanying

expressive movements which symbolize and accentuate the coöperative unity of all. Plough-culture, the same writer points out, individualizes labor: each man must guide his own plough. But it must not be forgotten that plough-culture makes possible the division of arable land into separate holdings or farms whose cultivation becomes the common interest and coöperative employment of the family, often enlarged to include two or even three generations. And although such agricultural proprietorship has been handicapped by isolation, within its limits it remains, in the unity of interest and endeavor which it engenders, the most effective basis of coöperation that society has produced: the world contains no more impressive symbol of coöperative endeavor than the farm homestead. That division of labor which restricted farming to the farmer also limited the activity of other men to specialized trades and occupations. But here too, while the new association was less wide and varied, it was in many cases more thoroughgoing and continuous. The master workman, journey-men and apprentices were, or might be, associated in an intimate and inspiring way by the labor of the workshop. Indeed such a workshop illustrates in a striking fashion the possibilities of comradeship in industry; within it a number of workers associated by a common aim and technique have each one as much opportunity for individual expression through creative work as his skill and experience may warrant.

Civilized man of today is often represented as a slave of the machinery he has himself invented and set up. But if modern man is in danger of having his soul crushed out by machinery, the fault is his own and not that of the mechanical devices his intelligence has created. That extension of social and political organization which by the end of the last century made the world one community was brought about by mechanical facilities of communication, transportation and production. If this enormous enlargement of man's powers of action has worked social injury, it has been because of attempts of individuals to utilize it for private profit instead of finding in it a means to more extended and effective intercourse with fellow-men. Much of the machinery of social life now inherited by each successive generation is

adapted to the use of all and, in civilized countries, all receive more or less training in its use. I have in mind not merely the 'modern marvels' which have been sufficiently celebrated, such as telegraph and telephone, steam and electric transportation, automobile and aëroplane. I am thinking of such familiar instruments of commerce as coinage and bills of exchange, of devices to expedite the processes of government like the secret ballot, and of all those appliances and instrumentalities which have been introduced into our homes to add to the convenience and comfort of life. All these technical devices are social products, conquests over matter by that faculty in man whose scope is universal; the most of them directly encourage human intercourse and facilitate human coöperation.

They should then be used with sense of their social significance. This requires some exercise of imagination, some power of intelligent correlation, and, it must be admitted, these capacities are often-times deficient and undertrained. Many individuals acquire a manual dexterity in working the machinery of social interplay and employ now this, now that, instrumentality for private gain with no appreciation of the network of social activities into which they are drawn. It should consequently be made a prime concern of popular education so to enlarge the intellectual horizons of future citizens that they can follow in imagination the far-reaching social ramifications of their everyday activities. Our schools should give information concerning the growth, organization and interdependence of the great industries that feed and clothe and house us, that put us in communication or transport us bodily, without regard to barriers of earth or sea or sky.[1] We are told that a regiment comes to realize its own unity by marching together. If men could be made conscious of working together, they would awake to a fresh realization of the social solidarity of mankind.

When we turn from the essential activities of daily life in which we all participate to the special trades and industries, the social benefit from the introduction of machinery is not so clear. In

[1] Professor Judd has recently emphasized the duty of the schools to bring home to new generations as they arise the social interplay of industry and interdependence of the economic activities of men. *School and Society*, August 3, 1918.

some few trades the workshop still survives where a number of craftsmen work together with improved tools, each contributing his skill to the finished product and consequently feeling a sense of proprietorship in the total enterprise. But the factory has for the most part taken the place of the workshop, and in the factory, as we know, the opportunity of the individual worker to make any contribution through his own skill is reduced to a minimum. And when the individual can find no expression of himself in his work, there is no reason to expect that this activity of his will identify him in a unity of coöperative endeavor with others employed in the same industry (dynamic interdependence seems in this case to have been transferred from the workers to the machines whose servants the men have become). This result promises to be accentuated to the extreme limit by scientific management: even under the factory system as previously operated the possibility remained for the workers to show individual skill in the management of their machines, but now all their movements are to be standardized and prescribed. How can a human being take personal interest, or find social satisfaction in the repetition of identical and monotonous movements? An answer to this question is at least suggested if we consider another aspect of scientifically directed industry. The elaboration of machinery and consequent organization of industry has made possible the association of human activities on a scale never dreamed of before, and has made these associated human activities productive to a degree unparalleled in human history and scarcely credible even now. If those who participate in such vast enterprises could come to feel their own acts, stereotyped and insignificant though they be in themselves, as necessary to, and symbolic of, the whole, they might acquire some realizing sense of the wonderful interplay of forces proceeding under intelligent direction and obtain some satisfaction from the marvellous results being produced. To bring this about two conditions must be fulfilled. In the first place, the workers must themselves be enlightened both in regard to the technical processes and labor organization of their industry on the one hand and concerning the service it renders to society on the other.

And, secondly, they must be associated in some degree, even though it be slight, in the direction of their enterprise. Each worker must be encouraged to feel that he counts somehow as a human individual in the conduct of the industry, for only if he is given this much opportunity for self-expression will he derive from his work any of that satisfaction of effective comradeship which constitutes its social and ethical value. As a recent writer has reminded us, work which has ceased to be individually creative may become socially creative.[1] To make it such the association of industrial workers must come to resemble in some degree that of team-mates in athletic sports, a willing coöperation in which each receives from his fellowship with the others and his contribution to the final result of their common effort some of the joy of team-play, one of the spiritual fruits of social life.

My thesis that types of imagery whose original significance is to be understood in terms of survival come in the course of social evolution to mean personal experiences in which men participate as members of an intelligent community, needs no extended defense in the case of those visual and auditory complexes which arouse the feeling of beauty. The senses of sight and hearing, as we know, give warning of the presence or approach of objects to the organism: shapes and colors and sounds are signs which elicit motor responses having survival value and anticipate the satisfactions which accompany the preservation or heightening of vitality. But from early prehistoric times man has found a satisfaction in pictures and engravings, in songs and dances, which cannot be explained in terms of organic response and must be referred to the intrinsic significance which these art-products had for his dawning intelligence. The cave-man of Europe at the close of the glacial period was decorating the walls of his grotto with carefully wrought designs and patiently shaping figures from bone and ivory. The products of primitive artistry, pictures and ornaments, of ritual movement and melody, were probably employed as magical or religious means of protection; but magical potency was ascribed to them doubtless because of the mysterious power they exercised over those who produced

[1] Marot, *The Creative Impulse in Industry*, pp. 137 ff.

or perceived them. They were appreciated by primitive man as objects of natural or created beauty are appreciated by us today because, through the emotions they arouse, they signify more or less definitely those fundamental experiences of personal aspiration and achievement, or of personal disappointment and haunting regret which are the common lot of mankind as possessed of rational wills which strive, under conditions of earth, for self-expression. There is reason, indeed, for holding that in æsthetic enjoyment we realize meanings that in thought we project as possible and in actions we strive to give existence to. Beautiful objects have this power because they free the imagination and stir the feelings as things do which are brought by choice and effort into identification with our personal wills. Art then gives rational significance to material or sensible objects, not the meaning which verbal images acquire when they come to suggest other images in the fixed relations that constitute the objective world, but the power which diverse sense-qualities possess, when combined in various orders and relations, of expressing the reaction of the human self to the existing nature of things which, because it is the reaction of a subject that maintains identity in spite of changing conditions, has potential universality. To this potential universality of æsthetic enjoyment is due its communicability. Through his painting or his poem the artist transfers his own emotional or imaginative response to life and the world to his fellows, and, considering the efficacy of the method, it is no wonder that art outstripped both language and industrial invention as an expression of the universality of human experience. The accumulated art-products which each human generation receives from those preceding are witness to that which they themselves have fostered, the fellow-feeling, the personal sympathy, the rational concord, of humanity. But it should never be forgotten that this, the social function of art, is incapable of explanation if we fail to recognize either on the one hand the diversity of sense-qualities as they appear to the consciousness of the individual or, on the other hand, as underlying the identity of the rational self.

Our conclusions thus far, which will I believe be borne out

by any intelligent study of the facts unbiased either by scientific prepossession or by metaphysical dogma, have a direct bearing upon education. They furnish us with true and appropriate conceptions for the interpretation of the educational process in human society and, at the same time, supply a corrective for grave misunderstandings of this process that have resulted from an over-hasty application of the principles of biological evolution to the field of social progress.

In the first place, we are never dealing in the educative process with living individuals merely; we are dealing always with social selves. It is a great mistake to think that we are founding our educational theory upon scientific facts by beginning with a study of man as a living organism in a physical environment. Man is never that, and so to begin is to substitute fiction for fact. Man is from the first a social self: his consciousness has the form of sociality which means universality. What does such a statement mean? Metaphysical theory? By no means. Rather, the simple and (when not misunderstood) undeniable fact that man *qua* man is able to correlate the contents of his consciousness in ways which express his own self-identity. With man as with the animal the result of instinctive response continued and modified by its own experienced outcome is to supplement sensory complexes with images and thus to build up sense-perceptions. But the human consciousness is never a mere procession of such perceptions with associated images. Passing perceptions such as yield an identical quality of satisfaction are correlated within the unity of class or kind; bodily movements or external events which lead to one result are correlated, as causes or conditions with this, their effect; the variety of qualities, the range of different satisfactions which objects present when realized, are organized within a unity of character or meaning. The constitutive principle of man's conscious life is thus that of identity in difference, the identity of rational will finding expression through a variety of different objects. But the human individual besides possessing by nature a universalizing intelligence receives by social inheritance an elaborate system of symbols for representing experiences as correlated in expression of rational self-

hood. He is taught to call objects by their class-names, to handle tools which embody and express the causal efficiency of natural forces and agencies, to sing songs and recite poems and enjoy pictures that stir the deeper emotions felt by all men in the face of a common lot and a common destiny. Whether the reason of mankind could ever have constructed such a universally valid system of distinctions and relationships as we have been describing if these symbols had not been employed and elaborated is a question we do not ask. Their existence and currency means that the human individual as a member of society is forced to exercise his intelligence sufficiently to interpret his experience in terms of distinctions and relationships that are valid for mankind universally. And not merely do language and technical appliances and art bring home to the individual the common human significance of his experience; the results of his own activities in intercourse with nature and his fellows enrich the meaning of these symbols and thereby add to their social value. Thus whether he will or not, man's conscious life (particularly of course that of civilized man) is set within the universal experience of humanity organized in accordance with the dictates of a common reason. Hence even although the individual fail altogether to realize the larger possibilities of his social inheritance and seek only to gratify his instinctive appetites, nevertheless he must formulate to himself his purposes in terms universally intelligible, he will in action avail himself of methods and devices that bespeak the common interest of mankind in controlling natural conditions, he may embellish his own satisfactions by the use of art forms that touch deeper chords of human feeling. This then is the meaning of the statement that man's conscious life has the form of universality.

Since man is never an animal and must develop as a rational self if he is to develop as a man, we can commit no more fatal blunder than to hold in the name of science that education which is largely concerned with transmitting to younger generations the science and literature, the art and technique accumulated by the race, aims primarily at an improved adjustment of the human individual to his natural environment. This conception

of education is in its effect particularly mischievous because based upon a perversion of the true relationship between the physical and the social. Since man's development is measured by his ability to participate in a social life organized on universally valid principles of reason, *i.e.*, a community of persons, the proper business of education is to assist the human individual in making his natural existence instrumental to the establishment of truly social or personal relationships. A second educational principle may therefore be laid down following the first: that education should make men able to translate their private imaginings, acts, and feelings into terms universally intelligible and therefore personally communicable. The work of education is thus to convert existence into terms of personality, to make living individuals capable of rational intercourse. In the accomplishment of this task, the largest use must be made of language and literature, of art and of the established manners, methods and machinery of industrial and social life. The human individual must first of all be rendered intelligently articulate; he must be taught to express himself adequately in the forms of oral and written speech. He is thus introduced into the world of rational discourse; his own ideas are made communicable to others and others' experiences communicable to him. A mastery of language opens to the individual the portals of a larger life that admits no limits of space or time: literature and history and science reveal to him what is significant in the experience of humanity extended by the powers of rational inference and prediction beyond the period and environments of man's history as an organic species on this planet. Again and secondly, the individual must be made in his action genuinely coöperative; he must be taught to employ the instruments and inventions, the method and practices of industry and intercourse and government with a sense of their social significance. It is not enough to make the individual skillful in utilizing the devices and appliances that make modern industry so productive, modern organization so efficient; he will acquire a certain familiarity with the machinery of business and politics without the help of education. But he must be taught the social use and value of this marvellous machinery for organizing human effort, and be prepared to derive from its em-

ployment a vivid and continuing realization of the interdependence of all human activities and a sense of personal proprietorship in the tools and technique that make this concerted activity successful.[1] Under these conditions and these alone will the work of the average man cease to be mere wage-slavery and become a willing partnership in human industrial enterprise. Third and finally, the educative process is left incomplete if feeling and fancy are not universalized and thus made expressions of personality. In many respects feelings, determined as they are by the satisfaction given to instinctive cravings and physical appetites, remain the most exclusively individual of all mental states. They can be effectively universalized, given rational and therefore communicable meaning, only through training in æsthetic appreciation; for by the awakening of this capacity, as we know, sense-objects which otherwise would arouse only the instinctive desire for selfish appropriation yield disinterested pleasure in contemplation. Experience in the enjoyment of beauty in art and in nature should therefore play a larger part in education than heretofore, and society must take active measures to open to the enjoyment of all its members the most beautiful in painting and music, in sculpture and architecture, in garden and landscape. The ideals of self-conscious personality have suffered somewhat in the estimation of students of social evolution from the formal and schematic way in which they have been presented; in particular has the universality which has been ascribed by idealists to the ideals of personality, truth, goodness and beauty, seemed abstract and empty when contrasted with the particular and definite aims that men actually do pursue. But when universality is interpreted as sociality, that true sociality which is founded upon the common reason that places men in intelligent communication with one another, and these universal ideals of knowledge and fellowship and beauty, are understood to find realization each through its own "action system," that is, through speech and manual dexterity and sensory adjustment,

[1] Even Mr. Mallock, who believes that the mass of mankind are born to toil with their hands rather than their brains, thinks that this common herd should receive some knowledge of economic fact and some training of the imagination, if for no other reason than to make them more contented with their lot and more capable of enjoying leisure hours. *The Limits of Pure Democracy*, 108, 316 ff.

the ideal of personal development must be admitted to give expression to all that is humanly valuable in our human situation.

The educative process is not completed by the introduction of the human individual into the great community of rational intercourse and endeavor. It should evoke and strengthen whatever powers reside in the individual of enlarging the scope of this rational order either intensively by multiplying the personal contacts among members of individuals or extensively by increasing the number of individuals and thus the variety of personal points of view. Now this end is served by all genuinely constructive or creative work whether in pure science, or art, or mechanical invention, or social adjustment. In the field of thought the discovery of new truth acts primarily to increase the subject-matter of intelligent interchange among persons already in communication. But such a discovery by the general interest it arouses may tend to quicken dormant intelligences or through its practical use in the control of physical or vital forces may be instrumental in raising many individuals to the level of intelligent intercommunication. Work in social and political reform such as aims to improve popular education or to secure a wider recognition of individual rights has the direct effect of increasing the membership of the great community, but at the same time, although indirectly, it adds to the material of discourse by bringing to the general cognizance fresh and interesting points of view newly become articulate. Inventions and constructions of a mechanical order, extending the control which intelligence has gained over the forces of the natural environment and calling for an ever more extensive organization of human energies, both multiply points of cooöperative and therefore socially fruitful contact among individual men and tend to draw an ever greater number within the net of associative industry. It is therefore a third principle fundamental to education that individuals should be stimulated and encouraged to do creative work in science or industry or art. Each should assume that he as an individual has his original contribution to human culture to make in one of these fields. There will be abortive effort and misspent energy and keen disappointment, to be sure, but this will not be too great a price to pay for ac-

complishing what our educational system largely fails to perform, that is, developing the individualities of the rising generation. No greater social service can be rendered by education than this; the individual can scarcely contribute anything more valuable to society than himself; for the range and richness of social intercourse is directly proportionate to the uniqueness and originality of the individuals composing it.

The gravest responsibility laid upon philosophy in this critical time of social reconstruction is to see that men give a true meaning to the admittedly social purpose of education. Philosophy must make it convincingly clear that the social life for which all agree that our youth should be educated is that of a community of free persons associated by rational communication, coöperative industry and emotional concord. Furthermore, philosophy must protest against all educational methods and tendencies which while they profess the interest of society really hinder or oppose the ideal extension of human life along lines of rational community. It must protest against the doctrine of social efficiency in education when this means that the agencies of social culture, literature, science and art, mechanical invention and political organization, are to be made use of for material gain or rational aggrandizement. It must protest against the tendency in the professed interest of standards of culture and refinement to restrict education to those who by close association for generations within the limits of social caste or intellectual class have cultivated a mutual understanding, a habit of courtesy and personal accommodation, a community of taste that is very thoroughgoing and satisfactory to those privileged to enjoy it. No less strongly must it protest finally against the opposite tendency now threatening human society, to attempt by a few violent and sweeping measures of industrial reorganization and political reform to fit men for a world-wide comradeship of free and willing workers, —while by these very measures it destroys such underlying sources of personal inspiration and spiritual vision as national loyalty, family honor and individual ambition which have contributed to human life some of its most exalted and illuminating experiences.

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THE LOGIC OF COSMOLOGY.

I. The Contribution of Faith.

I AM unprepared to make the first move toward proposing a logic of cosmology until I recognize that I have no evidence whatever for the existence of auditors.

Let us recall the two foundation principles of logic. As to terms: Words must have meanings. As to propositions: A choice is imperative between affirming and denying anything. Let us recall also the nature of evidence. Evidence for a proposition is any other proposition which if believed makes it difficult or impossible to avoid believing the first. Propositions which we meet forthwith in the psychological attitude we call belief are termed *self-evident* propositions; for example, the axiom—Things which are equal to the same thing are equal to each other.

An auditor interposes:—The evidence for the existence of auditors should be patent to the logician. It is an argument from analogy. From bodies nearly or remotely resembling his, he can argue to souls nearly or remotely resembling his.

So to speak is to mistake the cause of a belief for its reason. The cause of my belief in the existence of others, is the fact that a certain mass of experience I call my body has a dominant influence upon the whole of it; whence the sight of another body resembling mine becomes motive power for the assumption of another totality of experience like mine. This is a sequence of psychological effect upon psychological cause, but it is not an argument. The premiss and the conclusion are totally disparate. The premiss moves within my universe; the conclusion postulates another.

Nor has the premiss any better basis in reason than the conclusion. I have no more evidence for my own existence than for the existence of other people. *Something exists.* This single proposition is the bedrock of cosmology.

I leave this bedrock only by a leap in logic. The first mental movement toward a cosmology is not a step but a jump. The

All of things, at first a flux of elements simply coming into existence and passing out of existence, becomes, when I differentiate between myself and a world about me, a flux of elements which do not simply come into existence and pass out of existence, but which in many cases may somehow have existed before existing, and remain in existence after ceasing to exist. No evidence can engender or destroy such a belief. Evidence has two forms, inductive and deductive. Induction consists in saying that since things have happened so and so wise, they will happen likewise. Deduction consists in repeating in a new way what has once been said. Neither tells me anything about things that never can happen; and it is such things that I believe in when I affirm the existence of a world about me.

Incorrect, says an objector. My belief in a world about me is only a belief in things that can never happen *to me*. In this objection *petitio principii*, the bosom friend of all the argumentative, shows its unwelcome face. The *me* here assumed is exactly the point to be proved.

In fact, to affirm the duality of self and world is an act of faith and not of reason. When to the *Something exists* I add *Something else exists*, I am proceeding by my own unaided force. Each of the two assertions stands on its own bottom. The apparent consequence is a pure *non-sequitur*; a completely a-logical movement of thought. Evidence has no part in it, but only self-evidence, so far as it is evident at all.

Here I emerge upon the Cartesian viewpoint, the historical foundation of modern European philosophy: *Cogito, ergo sum.* The famous sentence is not an inference but an identical proposition. Descartes assumed the duality of I and not-I in his *Cogito*, and gave it a rhetorical echo in his *Ergo Sum*;—doubtless fully conscious what he did.

The assumption of a duality of I and not-I, of self and an external world, is an astounding liberty to take with thought. The simplest illustration makes the matter plain. When I wink a whole mass of the something that exists goes out of existence and exists again. By what right can I suppose that meanwhile what is non-existent nevertheless exists? The discovery,

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if discovery it be, is nothing less than the discovery of a *We*, namely, an *I* and a *Thou*.

It is possible to hold, at least in words, that this is going too far, and that the not-I is not a *Thou*, not a soul like that implied in its discovery. Yet, in thought, what ground is there for this opinion? Standing on the bedrock *Something exists*, when the complex of sensation I call the sun disappears below the horizon it ceases to exist. If leaping in logic from this standpoint I claim that the sun still exists, unless in one statement I simply deny the other, which logic forbids, there is some difference between the denial and the affirmation. What is asserted being identical with what is denied, a difference of assertor and denier alone remains. Logic compels the assumption of a perceiving *Thou* for whom the sun persists when it is gone for me. My apprehension of an external world, soulless as the atoms may be which compose it, is the discovery of that *Thou*.

But the discovery does not reveal the I and Thou side by side. The Thou does not appear simply other than the I. It does not take up the contents of the I when the I leaves them, and leave them when the I takes them up. The Thou I believe in shares in my world. Here I emerge upon a viewpoint akin to that of the Upanishads, and capable of expression by their dictum *Whatever exists, that art Thou*.

I take a second leap in logic more amazing than the first when I people the world with other I's. By this secondary belief, I affirm that *Something exists*—namely, another I—which is apart from me, while still, in harmony with the dictum of the Upanishads, not apart from the Thou. Otherwise expressed, something exists which is other than the original something while bearing the same relation that this bedrock something does to the *something else* affirmed in the primary leap away from it. Here I emerge upon the Leibnizian viewpoint; *the Monads have no windows*; but I have combined with it the Brahmanical belief that they have an identical foundation.

The cosmology thus reached may be stated as follows: *Something exists; Something else exists; Something exists which is else to the first and not else to the last.* With these affirmations I

finally emerge upon the dizzy logical summit which forms the cosmology of civilization: that is, the conception of a world peopled by indefinitely numerous and mutually exclusive I's.

It is conceivable that I should refuse to execute any of these acts of belief either primary or secondary. I may deny the reality of the dualism of I and Thou, holding my view of things to the ultimate cosmological bedrock *Something exists*. According to this view, the order of the All is interrupted whenever what is commonly called I turns its back, as in falling asleep. The stars might grow into whirling globes under the conditions that I should name *travelling toward* them; but in default of these conditions the only real existence of the stars is that of pinpoints in a nightly blue. Rather than a Cosmos, this conception may be termed a *protero-cosmos*.

Or I may balk at the second and multifarious leap in logic. I may decline to believe in the existence of other I's. The people I meet may all be automata to me. There may be nothing behind their faces and their acts. Some of us can remember when we thought so. William James once told me he could recall the time when he first came to realize that other people had souls like his own. The realization is dim enough in almost all of us still. The philosopher who refuses it altogether is called a *Solipsist*. He exists, but he alone. But if alone, why he at all? Although a truncated creed, his is a creed all the same. Logically his choice to be hung for a cosmological lamb rather than sheep is no more respectable than the opposite choice of the common man.

Passing the solipsist by, and taking the second logical leap, I find therein a sense of the term Thou in which the dictum of the Upanishads—*That art Thou*—no longer holds. That—when I mean thereby my thought or my feeling—art *not* Thou—- when I mean thereby my friend's thought or his feeling. I do not think his thoughts or feel his feelings; nor he mine. Each of us according to the familiar comparison is an island of being, absolutely inaccessible from every other. Yet most of us believe in the real existence of all the other inaccessibles.

2. THE CONTRIBUTION OF REASON.

All that the present exposition has hitherto accomplished has been to develop the logical nature of the Cosmology of Civilization, the conception of souls in a world. In so doing we have traced its growth from the germinal tenet *Something exists* by successive acts of pure belief, first to a Thou, then to other I's. What remains of our exposition will no further tax faith, but instead appeal to reason. Our task will be a rational development of the cosmology of civilization. The demonstration is—*quod sciam*—personal to me. The part of wisdom in such a case is to expect that its clear presentation may recall to some reader the philosopher in East or West who has before advanced it. Meantime let it be examined on its merits.

I have spoken of a *Something that exists*; a *Something else that exists*; and of *Somethings else to the first and not else to the second*; otherwise expressed, of mutually exclusive I's all bearing the same relation to a Thou. It will be a convenience to designate these parties to the received cosmology by the initial of the word *Something*, using the Greek capital Σ for the something to which all the others bear the same relation and the Greek small σ for these others. The Greek initials are chosen, notwithstanding the barbarity of the choice, because more easily distinguishable than the Roman *S* and *s*. The letter S has the advantage of being the initial at once of the word *Something* and the words *Self* and *Soul* and *Spirit*, which are the customary terms for these primordial elements of the world as usually believed in.

The words by which the relation between the Σ and any σ are customarily expressed are such words as *beneath* or *within* or *including*. None of these words does more than adumbrate the relation. It is unique and can be unequivocally indicated only by pointing at it. Let us express this unique relation which the Thou bears to each I by the letter r; and the converse of this relation, namely, the relation which each I bears to the Thou by cr. Let us further represent the case in which anything is in both of two relations to anything else by writing both the letters denoting the relations. Let us further represent any relation other than a given one by writing the letter for the given relation with a bar over it.

A relation may or may not be its own converse. The relation *cousin* is an example of a symmetrical relation. If A is cousin to B, then B is cousin to A. The relation *agent* is an example of an a-symmetrical relation. If A is agent of B, then B is principal to A.

Again, a relation may or may not be reciprocable: that is, it may or may not be possible for the relate to bear toward the correlate both the direct and the converse relation. The relation *lover of* whose converse is *beloved by*, is an example of a reciprocable relation. If A is lover of B, A may still at the same time be beloved by B. The relation *right*, whose converse is *left*, is an example of a non-reciprocable relation. One's right hand cannot at the same time be one's left hand.

The relative terms beneath, within, or including, by which the unique relation r is sought to be expressed, name relations at once a-symmetrical and reciprocable. They are a-symmetrical; for the relation of foundation and superstructure from the standpoint of the foundation is beneath, from the standpoint of the superstructure is above; the relation of today and this year from the standpoint of the day is within; from the standpoint of the year is without; the relation of circle and circumference from the standpoint of the circle is included by, from the standpoint of the circumference is inclusive of. They are also reciprocable; a fish is both above and below the water it swims through, a man both without and within the air he breathes, a body both inclusive of and included in the space it occupies.

So designating the σ relation, we may represent the belief by which we affirm I's and a Thou—ourselves and a world containing us—by the expression

$$\Sigma \; r \; \overline{cr} \; \sigma.$$

It is at once evident that if we guide ourselves by the two foundation principles of logic this expression represents but one of four possibilities. Besides bearing to σ the relation r only, Σ may bear to σ the relation cr only, which is different, or both r and cr, which is possible, or neither r nor cr. The remaining three possibilities expressed in the same notation are the following:

$$\Sigma\, cr\, \bar{r}\, \sigma$$

$$\Sigma\, r\, cr\, \sigma$$

$$\Sigma\, \bar{r}\, \overline{cr}\, \sigma$$

Of the four cases, the three which contain a positive element exhaust the possible forms in which the Σ-relation may present itself, the fourth being its total denial. A complete logical theory of that relation is thus a cosmology embodying three modes of being, of which one only is affirmed in the cosmology of civilization, or the conception of selves in a world.

The other two possible modes of being are—*quod sciam*—newcomers in philosophical theory. But conceptions approximating to them are far from strangers to the faith of men. In all ages and among all peoples it has been held that a world existed other than that we believe ourselves now to occupy in common, and that beings existed intermediary between the two. The novelty, if novelty it be, of the present exposition lies in its demonstration that a world, conceived as the cosmology of civilization conceives it, logically implies these two other possibilities: one its opposite, the other their intermediate. The fully rational form and fashion of a universe such as most of us believe in is that of a tripartite whole, in which what we call *nature* is completed by what may be called an *ob-nature* and what may be called an *ambi-nature.*

The obnatural world of this demonstration is not a *super*-natural, the theater of a sublimated natural life. An inversion is neither an etherialization nor any other kind of heightening. Nor is the ob-natural world an abode in or beyond the stars. A change in the mode of our being is not a matter of displacement in space. Nor is the obnatural world the scene of an absorption of the I into the Thou. An exchange of rôles does not release the actors but retains them.

Nevertheless, the tripartite cosmology draws in passionless logic outlines common to convictions expressed in all these ways. A change in the mode of our being, though not an affair of other space, is an affair of other time; and the obnatural world may really represent a lost Paradise or a future life. The conception

fits beneath the verses in which Shakespeare alludes to the cosmology of the West:

So part we sadly in this troublous world
To meet with joy in sweet Jerusalem.

It fits also beneath the pilgrims' prayer to Kwannon in which Okakura has pictured the cosmology of the East:

At thy peaceful shore a port we seek.
Guide our frail bark through the storm of life.

The third conception, that of an ambi-natural state, is one which supposes a historical human being to have dwelt at the same time in the other world. It is not given in the shadowy angels and archangels of Christian faith; perhaps not in the Avatars (descents of deity) and Bodhisattvas (ascents toward deity) of the East; but it may reasonably be thought a part of Dante's vision of divinity, wherein a second of three circles of light

Within itself and of the selfsame color
Appeared to me with our own image painted.

Upon these visions it is not the office of this discussion to enter. We have sought only to develop the pattern which a total conception of the universe of selves in a world must take in reason. Our theme has been the logic of cosmology, but neither its ethic nor its æsthetic.

Let us examine the logic again. Its conclusion establishes a triple possibility: first, a state in which a universal soul exists *beneath*, as we say, each individual soul; second, a state in which each individual soul exists *beneath* a universal soul; and third, a state combining these correlative conceptions. Its argument is this: to deny this triple possibility is to deny the cosmology of civilization; that is, a world and we within it. No sooner do we fully grasp the relation of the two than the tripartite cosmology opens from it like a flower from its stem, attended by its negative as a flower casts a shadow.

In this argument the first constituent is a belief self-evident if evident at all; namely, a belief in soul. Infidelity to this belief is possible; but we have seen reason to doubt whether a thorough-going disbelief in soul can be said to leave a cosmos;

and we have called the conception a *protero-cosmos*. We may it is true disbelieve that the not-I implied in the conception of I is also soul; but for this idea we could find no logical warrant.

The second constituent in our argument, the affirmation that other souls exist, is likewise self-evident if evident at all. Infidelity is possible here too. But this is an inconsequent heresy, an arbitrary refusal to take more than one logical leap; and it has appeared to us the dictate of good sense to accept instead of solipsism the cosmology of civilization by which the world is peopled with a plurality of mutually exclusive I's.

The third and final constituent in our argument consists in applying to the relation of I and Thou, judged as a-symmetrical and reciprocable, the fundamental principles of logic which command us to give words meanings and to choose between affirmation and denial. The result of this application is the tripartite cosmology. To reject the principles from which it finally unfolds is to reject logic; and let us remember that the alternative to logic is not illogical discourse but none at all: in a word, silence.

The logic of cosmology may be expressed in one sentence. Either there is no such thing as soul, in which case, since gravitation stops when I've gone by, the All of things is not a Cosmos; or there is nothing else than Soul; in which case the All of things is at once a Cosmos, and potentially tripartite.

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THE DESCRIPTIVE METHOD IN PHILOSOPHY.

THE pragmatic theory of knowledge rests, finally, upon the doctrine of "immediate experience," which indicates "the necessity of employing in philosophy the direct descriptive method that has now made its way in all the natural sciences, with such modifications, of course, as the subject itself entails." Again: "The inferential factor must *exist*, or must occur, and . . . all existence is direct and vital, so that philosophy can pass upon its nature . . . only by first ascertaining what it exists or occurs *as*."[1]

In the note from which these quotations are taken, Dewey expressly repudiates the older empirical doctrine of immediate experience. He does not mean by the 'immediate' any particular kind of given existence—such as sensation—which is ontologically prior to thought, "any aboriginal kind of stuff out of which things are evolved." Nor is the descriptive method advocated by Dewey to be confused with the older inductive conception of scientific method as a process of discovering the connections which obtain between the particulars of experience. With sensations as such, or with experience as a collocation of feelings, instrumentalism has nothing to do. Nevertheless, as will be seen, experience is regarded as a 'given' from the standpoint of judgment, something assumed to be final for philosophical reflection. The precise nature of this assumption should be brought to light.

In this connection it may be remembered that the great word in pragmatism is 'action.' C. S. Pierce shot straight at the mark when he said: "This doctrine [pragmatism] appears to assume that the end of man is action—a stoical maxim which, to the present writer at the age of sixty, does not recommend itself so forcibly as it did at thirty."[2] We ought to expect, then, to find that the 'immediate experience' of instrumentalism is a theater of action—a stage on which man realizes his chief end

[1] Dewey, *The Influence of Darwin on Philosophy*, etc., p. 240.

[2] Baldwin's *Dictionary of Philosophy and Psychology*, article on "Pragmatism."

as a doer. Dewey's definition of experience confirms this expectation. 'Experience,' he says, "is primarily what is undergone in connection with activities whose import lies in their objective consequences—their bearing upon future experiences."[1] One ought to charge a *hysteron proteron* against him at once.[2] But it is frequently urged that this form of argument is unavoidable in a philosophical system which is organic rather than structural, and, within measure, this must be admitted.

This, then, is 'immediate experience.' The world viewed as a theater of action wherein an organism seeks to maintain and develop itself, is what is given to thought, and from this, 'immediate' philosophy must take its departure. Would it be of any use to argue that experience so conceived is a highly sophisticated affair, a late product of thought, rather than that with which reflection really begins? To raise the question is to invite the old answer that philosophy must begin somewhere—why not with what is most certain and dependable? It is useless to retort that experience so understood is certain and dependable because it has been established and tested by judgment in a thousand and one crises. And yet, there is a world of good sense in certain of Bradley's comments about the world of practical action. "What," he asks, "is the world which I am accustomed to call 'my real world'? It is (we must reply) the universe of those things which are continuous in space with my body, and in time with the states and actions of that body. . . . Now if I make an ideal construction of this nature in space and time, I can arrange (more or less) in one ordered scheme both myself and other animates, together with the physical world. This arrangement is practical since I can act on it, and since I must

[1] *Creative Intelligence*, p. 20.

[2] A. W. Moore says: "If, here, the metaphysical logician should ask: 'Are you not in this assumption of a world of reflective and unreflective conduct and affection, and of a world of beings in interaction, begging a whole system of metaphysics?' the reply is that if it is a metaphysics bad for logic, it will keep turning up in the course of logical theory as a constant source of trouble. On the other hand, if logic encounters grave difficulties when it attempts to get on without it, its assumption, for the purposes of logic, has all the justification possible" (*Creative Intelligence*, p. 79). This *ignoratio elenchi* will hardly suffice to explain away the *petitio*.

act on it if I am to continue what I call my 'real' life." But, he asks, is this the only possible world? "My 'real' world depends, as we saw, on my body, but then that leads to a further question, What is really my body? . . . The whole center and foundation of what I call my 'real' scheme is the body which to me is mine at this here and this now. Such a result may be unwelcome, but, however unwelcome, it seems unavoidable. Why I should then assign to my 'real' scheme an exclusive or even a superior reality, seems far from evident."[1]

This somewhat extreme (but nevertheless justifiable) statement ought at least to suggest the truth that experience has a distinctly human side. Curiously enough the pragmatists have insisted strongly that experience is many things to many men; they have made a distinct effort to 'humanize' the world. Why, then, this prejudice in favor of a biological action-world? Ought we not to ask, for whom does such a world exist, and under what conditions? It is doubtful whether this question has ever been considered seriously by the pragmatists, in spite of their recognition of the relativity of experience to human purposes and designs. For did they take it seriously they would be led at once into metaphysics, a good enough reason, according to their view, for evading the issue. It seems an unavoidable conclusion that experience as defined by Dewey is meant to be taken as ultimate for philosophy, a proposal which, in view of the teachings of the history of philosophy, is as startling as it is audacious.

And it must be remembered that it is through an appeal to this 'immediate' world that Dewey proves the instrumentalism of thought, with all the anti-intellectualism thereunto appertaining. "It should be possible to discern and describe a knowing as one identifies any object, concern, or event."[2]

"Or, put more positively, knowing is one mode of experiencing, and the primary philosophic demand (from the standpoint of immediatism) is to find out *what* sort of an experience knowing is —or, concretely how things are experienced when they are ex-

[1] "On My Real World," *Essays on Truth and Reality*, pp. 460 f.

[2] *The Influence of Darwin on Philosophy*, etc., p. 77.

perienced *as* known things."[1] Remembering now that Dewey's 'immediate' is a world of action, interaction, adjustment, response, adaptation, and remembering also that to 'describe' is to tell what happens in experience-so-defined, how could his so very empirical seeming experiment result in any other conclusion than that which does result? If thought *must* be an activity that occurs in an adjustment-world, how can it be anything but a form of adjustment?

It does make a difference, then, how experience is defined, and on this account Dewey's *hysteron proteron* ought to be seriously considered. But this problem of how experience ought to be defined, in view of the all-too-human character of our reflections upon it, is precisely the problem of metaphysics. But no pragmatist can be induced to enter that field. In such an emergency, it would seem best to confine attention for a while to thought as a concrete process in reality. Granting the pragmatist his starting-point, let us ask whether he makes good use of it, and, more particularly, whether his assumptions justify themselves in practice. Thought, we must suppose, is some kind of a process in experience. What kind of a process is it?

In controversy pragmatists have directed criticism especially against two conceptions of thought, one of which has seemed to them too narrow, and the other too wide. Thought as a self-enclosed activity confined to a world of subjective impressions is the *bête noire* of the instrumentalists. The copy-theory has been vigorously assailed wherever it has dared to show its head. The classical instance of the pragmatic assault upon the 'copy' theory of reality is, of course, Professor Dewey's criticism of Lotze, as contained in the *Studies in Logical Theory* (1903). Nobody (unless he be a professed dualist) would be apt to deny the validity of this criticism. Nor can the pragmatists very well urge that the overthrow of the Lotzeans leaves themselves in undisputed possession of the field.

The wider conception of thought has been dubbed by its opponents 'structuralism.' Kant, it will be remembered, having on hand Hume's intractable 'manifold of sensation,' tried to trans-

[1] *Op. cit.*, p. 229.

form it into a rational experience by subsuming it under the forms of space and time, and the twelve categories of the understanding. A world so constituted would be a system of sensations held in order by 'thought.' The pragmatists have made merry over the deficiencies of this 'constitutive,' or 'transcendental,' or 'cosmic' thought. Valuable as such a criticism might have been at one time, it seems to be little called for in this day and generation. And from these observations it would seem to follow that pragmatic criticism has missed the mark, if it was intended as a polemic against rival contemporary theories of knowledge.

But it ought to be frankly conceded that modern idealism (to say nothing of neo-realism) is rather elusive. It offers an indefinite target placed in a field of low visibility. Idealism is not (as has so often been supposed) a single, coherent, methodically constructed system that can be assigned a definite place in a chart of philosophical theory. It is, on the contrary, 'speculative philosophy,' and as such is made up of a mass of independent hypotheses, suggestions, experiments, tentative proposals about the nature of things. Probably everybody would admit that Bosanquet's *Logic* (choosing at random) cannot very well be refuted by a single blow directed at its center, because its center is everywhere and nowhere. How much more difficult, then, to sum up all idealism in a single formula and blast it with one charge. But perhaps we ought to confine our attention more strictly to the subject of knowledge, since it is the nub of all criticism. And in this connection it will not be amiss to indicate that the charge of system-making, if it is to be made at all, ought to be directed against the pragmatists. For do they not boast openly that their account of thought is definite, concrete, thoroughly understandable and therefore practically useful? And is not their *real* criticism of the idealistic account of thought just this, that it is vague, speculative, too unstable and uncertain to be serviceable as a guide to the conduct of life? I have tried to show elsewhere that Dewey (who started out as an idealist) was led into functionalism through his desire to give a thoroughly concrete and definite account of the 'synthetic activity' of

thought as a process in experience.[1] This demand for definiteness, simplicity, and concreteness is characteristic of all pragmatists, and stands out as the most powerful 'determining tendency' in their mental make-up.

Concerning this activity called thought, then, it would seem appropriate to ask whether we ought to expect, considering the present extent of our ignorance, anything like an exact and explicit account of its nature and laws, and again, whether the pragmatic account of thought is as definite as it appears to be, and (being found definite) whether it is tenable in the light of all the facts of experience. Considering the first matter we have no guide but general presumption. It would be easy enough to raise a dispute over the efficacy of our scientific methods, and the assurance with which their results may be accepted, and the degree of positiveness that the status of our knowledge warrants. Our first question must needs, then, pass unanswered. It may be permissible to express, however, a conviction that, in spite of all our science and experiment, the human mind remains, in a sense, a mystery. If this conviction is supported by an even partly adequate appreciation of the complexity of the mental life, and some little insight into the nature and limitations of our methods of interpreting it, it may at least justify itself by serving to encourage an attitude of healthy scepticism. And this, combined with a normal sense of humor, would seem to be a desideratum in the present mental crisis of civilization. "This is a gift that I have, simple, simple; a foolish extravagant spirit, full of forms, figures, shapes, objects, ideas, apprehensions, motions, revolutions. These are begot in the ventricle of memory, nourished in the womb of pia mater, and delivered upon the mellowing of the occasion." *Holofernes* has, at least, some appreciation of the complexity of mental phenomena, and that, surely, is a gift.

The second question, however, cannot be set aside. Is the functional theory of knowledge as definite and precise as its exponents suppose it to be? Now, to be sure, such a question might seem to hint at some occult insight into the pragmatic

[1] *John Dewey's Logical Theory*, Cornell Studies in Philosophy, No. 11.

mind. But do we not read, in Dewey's essay, "A Recovery of Philosophy" (in *Creative Intelligence*), that pragmatism is to free us forever from the time-worn problems of traditional philosophy, wipe the slate clean, and make philosophy a device for dealing with the practical affairs of life? Nonsense to say that pragmatism is merely a method! It would be quite absurd to treat it as anything else than a solution. A definite solution, that reformulates the whole problem of knowledge, and puts logic on firm ground. It must surely mean something very definite and precise.

But before we consider the conclusions of pragmatism it might not be amiss to consider the 'direct descriptive method' by which they are attained. "Pragmatism," we are told, "is content to take its stand with science; for science finds all such events [knowing among others] to be subject-matter of description and inquiry—just like stars and fossils, mosquitoes and malaria, circulation and vision."[1] Since Dewey nowhere (so far as I am aware) enlarges upon this matter of description, we are to take it, presumably, that his general meaning is quite obvious. Philosophy is to give up its idle trifling with concepts, and *describe*.[2] Description, however, at least scientific description, is *not* a simple matter. It is a highly complicated and technical procedure, requiring long training and special equipment. Consider, for instance, the business of describing the stars. It would take our pragmatist ten years to learn to describe as the astronomer describes, and the things he would need most would be, not telescopes or charts of the heavens, but concepts, abstract ideas, 'floating adjectives,' to be applied on occasion. It would be quite fallacious, in fact, to assert that the sciences describe, if it be meant thereby to imply that all follow an established procedure. What constitutes description in astronomy would be sheer gibberish in biology. And the question therefore presents itself, what kind of description does the pragmatist actually employ in dealing with reality?

It must be admitted that Dewey's works are filled with con-

[1] *Creative Intelligence*, p. 55.

[2] See *Ibid.*, p. 63.

crete references and illustrations. Pragmatic writings, generally, have an empirical appearance. But surely, however description may be defined, it cannot be identified with illustration. Description is universally regarded as a process which precedes and leads up to hypothesis and conceptual explanation, whereas illustration merely serves to make clear the import of principles already established. The scientist is, of course, a 'describer' (although the word must be used cautiously), but it cannot be said that the principles with which he works are proved by applying them here and there at random to see whether they fit. On the contrary, his categories are proved in the very process of being brought to light and recognition. They are bone of the bone and flesh of the flesh of the facts to which they apply. But Dewey proves that thought is a form of behavior that 'comes after something and for the sake of something' by demonstrating how perfectly his categories of adjustment and response work in a few selected instances. We are confronted here with the question of what empiricism means, or ought to mean. Have the pragmatists studied the facts of the mental life assiduously and carefully, at first hand, and on their own account? Are the categories which they employ principles which have developed out of the facts in the course of the effort to interpret them? They look, at any rate, suspiciously like certain categories of the same name that have gained a standing in the biological sciences. It cannot be argued, of course, that it is in all cases illegitimate to employ in one field of knowledge the concepts that have developed in another, but Kant was justified in dubbing their uncritical employment 'dogmatism.' At least, they cannot be illustrated into legitimacy. And since the pragmatist is much given to illustration, but not at all devoted to anything that can be recognized as 'description,' it must be concluded that, at least in its present form, Dewey's method of 'direct description' is as vague as possible.

When we inquire, however, concerning the concreteness of Dewey's completed theory of knowledge, we are on different ground. Is not this, it will be asked, a matter of opinion? How can it be settled except by a vote? Consider the testimony

for a moment. It must be agreed that a considerable number of philosophical students have found Dewey's results delightfully understandable, a great relief from the vagueness of idealism. The functional theory of knowledge, in fact, serves as the basis for a whole program of reform in education and sociology. On the other hand one is reminded that most idealists, and a considerable number of realists, both on their own word and that of Dewey, have incessantly misunderstood the instrumental theory of knowledge. It would be a hopeless task, therefore, to seek a consensus of opinion.

But, coming to closer terms with the question, we may agree that the intelligibility of any theory depends upon its capacity to illuminate the facts to which it is applied. And in advance of all speculation, it must be admitted that there is small likelihood of such explanatory value in case the theory has been formulated without reference to any important group of facts that might have a bearing on the problem under investigation. This reflection brings us, finally, to the crux of the whole matter. For it will be urged here that Dewey, having left out of reckoning the data furnished by logic, is in no position to give a completely adequate account of the nature of thought as a process. This argument, to be sure, is something of a *tu quoque*, but the situation makes it inevitable.

When psychology left the philosophical fold, and established itself as a separate science, it left behind it logic, ethics, æsthetics, and the other disciplines that deal with human nature. In this fashion it limited its pretensions to be the exclusive science of mind, and confined itself to a particular field and a particular task. In Dewey's hands, however, psychology repudiates its original contract, and either swallows up the special philosophical disciplines within itself, or denies their right to exist—perhaps a little of both. But the fact is that our knowledge of mental phenomena is obtained through several sources, of which logic is not the least. In logic problems are wrestled with, facts considered, victories won and mistakes made without let or hindrance from any other science. Aside from the obvious inapplicability of the functional categories to the immediate subject-matter

of logic, it must be considered that the pragmatists have never tried, or pretended to try (so far as I know), to apply them to logical problems. Nor have they written independently (except controversially) on the subject. Now surely this circumstance is not without significance. It seems a fair inference that pragmatists have no interest in logic, and it is certain that they make little or no use of the results of logic in estimating the nature of the knowledge process. It is well enough to appeal to biology and sociology,—as the pragmatists do,—but in constructing logical theory why leave logic out of account?

These comments may be confirmed by reference to one of the latest (presumably representative) pragmatic pronouncements on the subject, Professor A. W. Moore's essay, "Reformation of Logic," in *Creative Intelligence*. It is perhaps needless to say that Professor Moore's 'reform' does not touch logic internally, except for some generalizations concerning the nature of hypothesis. He has very little to say about judgment and inference, and raises no problems about negation, quantity, modality, or the nature of propositions. On the contrary, his essay is an attempt to maintain that "the present task of logical theory is the restoration of the continuity of the act and agent of knowing with other acts and agents."[1] It is, in other words, an attempt to 'naturalize,' the act of knowing. Logic is reformed by tearing down the old barriers which constituted it a separate science, and making it biology, sociology, politics, eugenics—not to mention psychology, chemistry, physics, and the other branches of knowledge—all at one and the same time. Professor Moore's argument, of course, means that logic, in its traditional form, has no right to exist.

"We do not mainly want to ask," says Bradley, "How does judgment stand to other psychical states, and in ultimate reality what must be said of it? Our desire is to take it, so far as we can, as a given mental function; to discover the general character which it bears, and further to fix the more special sense in which we are to use it."[2] Bradley is always careful to distinguish

[1] *Creative Intelligence*, p. 77.
[2] *The Principles of Logic*, p. 2.

between metaphysical and logical problems. It is clearly his opinion that logic is a special science, having its own field and its own unique problems, and this seems to be the common view of the older logicians. It is true, then, as Professor Moore maintains, that the nature of thought as a process is not fully set forth by the logicians.[1] Such a complete account can only be supplied by metaphysics which, reckoning upon the information supplied by all the special sciences, is in a position to ascertain the place and function of thought within the whole of experience.

The pragmatic contention, in virtue of which traditional logic is set aside, is that the test of truth is extra-logical—that is, dependent upon non-logical activities. Two things should be kept in mind here: (1) The notion that thought is an occasional activity results from the application of the 'direct descriptive method,' and is peculiar to functionalism. And in this connection it ought to be remembered that logic has something to say about the validity of methods, and hence about the validity of the 'direct descriptive method.' (2) Even if it be admitted that truth can only be discussed by taking into consideration the place of thought in reality at large, a proposition which might be admitted with certain qualifications, there still remains the important question whether the pragmatic conception of the ultimate nature of thought is adequate.

It will be seen that the argument approaches a *cul de sac*, from which there is no release except through a direct consideration of the value of logic as it has existed hitherto, a subject much too large for a brief paper. Briefly, however, there would seem to be no *a priori* reason why the knowledge process cannot be studied directly, as it appears from the standpoint of the knower. The undertaking is surely natural enough. Nor does it imply, as is so often suggested, the subjectivity of thought. It does not follow that, because the knowledge process can be studied without reference to biology and the social sciences, the process is itself isolated and without a place in the real order of things. And, at least in idealistic hands, logic reveals by its

[1] See *Creative Intelligence*, p. 71.

own movement the universality and objective necessity of truth. Nor, again, is logic as a special science abstract in the sense that it deals with thought apart from the world. On the contrary, the results of logical inquiry demonstrate clearly that truth and meaning are incomprehensible apart from concrete reference and application. For if thought is a real process, as must be assumed, it is in and of the world, and a considerable effort at abstraction would be required to separate it from its objects. What is to prevent, then, a direct study of the knowledge process? Why must it be approached indirectly, through biology and sociology?

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THE FUNCTION OF INTUITION IN DESCARTES' PHILOSOPHY OF SCIENCE.

THE purpose of the following paper is to deal with an aspect of the thought of Descartes to which the traditional treatment of his work by historians of philosophy has given quite inadequate consideration. It is usually supposed that his central interest was the building up of the well known metaphysical system. But for several reasons this does not seem to have been the case. In the first place, the doctrine of the nature and function of God, which is the basis of that system, arose at a relatively late stage of his intellectual development. In his earliest work, the *Regulae*, we find no more than traces of it. Secondly, this doctrine has little connection with the field of positive science in which he made his most important contribution to human knowledge, and we might well suppose that a man whose main preoccupations were scientific, and indeed who came upon general problems in the course of his scientific work, would be more interested in a philosophy of science than in a constructive metaphysic. And thirdly, while it will not be possible to take the matter up in any detail or very systematically, enough will be said to show that his treatment of the fundamentals of his metaphysical scheme exhibits such marked and radical contradictions that while it would perhaps be hardly fair to say that it was a mere sop to the Cerberus of the Church, it is very difficult to believe that Descartes took it as seriously as later comment would have us think.

While the Cartesian system as ordinarily understood, ostensibly takes its rise from the notion of intuition, or *lumen naturale*, as he prefers to call it in his later work, in the sense that we might call it a metaphysic of intuition, it will be maintained that this is in effect a *tour de force*, and that the true meaning and valid development of the theory of intuition is to be sought elsewhere. It is evident from his numerous autobiographical references, that Descartes was a working scientist who was interested in problems

of method, and it is along this line that we must look for his genuine approach to the questions of philosophy. Further, the doctrine of intuition was the vital nerve of his conception of an adequate scientific method, and if we understand it, we shall understand his general position. But that doctrine inevitably brought him into touch with the problems proper to epistemology, and thus we shall find that our exposition naturally falls into two main divisions. First we must see in what sense Descartes regarded intuitive knowledge as the proper and valid organ of science, and take up the doctrine of intuition from the purely methodological point of view. But second we shall see that this theory of method brings into unavoidable prominence the philosophic problem of objectivity or externality, and this will bring us face to face with the Cartesian epistemology.

I. INTUITION AND METHODOLOGY.

The purpose of the *Regulae*, as Boyce Gibson points out,[1] is to work out the general questions of method which find their application in the *Geometria*, which is closely connected with it. And in the opening passages of the former work we find that Descartes' primary concern is to arrive at what he calls "*scientia*," which he defines as certain and evident knowledge. This search for certain and evident knowledge arose from a twofold discontent with science as he found it. On the one hand, he complained that it was cumbrous, in that it arrived at its results, which were often correct enough, by chance rather than by analysis; and on the other hand, it failed to establish the validity of its results by building up from a basis whose validity was assured. Now the method, which he says is "necessary for investigating the truth of things"[2] is designed to obviate these difficulties, in that it builds up a logically coherent system and bases it upon an assured foundation. This notion of certainty is of the greatest importance in the thought of Descartes. Indeed it is more important than the notion of truth. In the *Regulae* we find that the identity of truth and certainty is assumed. Later he tries to demonstrate their

[1] *Revue de Métaphysique et de Morale*, 1896.

[2] Descartes, *Works*, Adam and Tannery, Vol. X, p. 371.

identity by means of his metaphysical notion of a good, and therefore trustworthy God, who is the giver of clear and distinct ideas. But in the fifth Meditation, speaking of this demonstration, he says: ". . . and although I had not demonstrated this, the nature of my mind is such that I could not prevent myself from holding them (*i.e.*, clear and distinct ideas) to be true, so long as I clearly and distinctly conceive them." Thus at the outset we encounter the antinomy between the Cartesian methodology and the Cartesian metaphysic, for this amounts to an almost explicit admission that the philosophy of science has no need of the metaphysico-theological constructions which are designed to show the necessary truth of certain and evident knowledge.

The quest for certainty is carried on, and the requirements of certain knowledge are brought to light, by means of his familiar method of doubt. In the *Regulae* this appears as nothing more than the tentative and critical hesitancy of the scientist in accepting results and drawing conclusions. Thus he finds various practical difficulties in a number of sciences and pseudo-sciences, and comes to the conclusion that only in arithmetic and geometry do we find the certainty which is the mark of genuine *scientia*. Later this method of doubt develops into something much more sophisticated and metaphysical, which Huxley has called a "scepticism before knowledge," and he refuses to accept even arithmetic and geometry as necessarily true, partly on the ground that mistakes have occurred even here, but mainly because an omnipotent God might deceive us even where there seems to be most certainty.[1] Thus we find once more that he rejects in metaphysics what he accepts in methodology. Now science will regard geometry and arithmetic as certain because they deal with a special type of objects, simple essences, which, as he puts it, involve nothing that experience has rendered uncertain. That is to say, we have here genuine *scientia*, genuine intuition, free from all confusing elements. For Descartes, mathematics is something more than an illustration of the working of intuition. It is the characteristic field of undiluted intuitive knowledge, and

[1] *Op. cit.*, Vol. VIII, p. 6.

thus the mathematical method will be the ideal method of all research, and the *Mathesis Universalis* will be the final philosophy.

He describes intuition as follows: "By intuition I understand not the shifting testimony of the senses, or the misleading judgment of the ill regulated imagination; but a concept (conceptum) of an untroubled and well directed intelligence (mentis purae et attentae), which is so facile and distinct that absolutely no doubt is left about that which we understand."[1] There are two interpretations of this notion which seem to give an incorrect idea of its intent, and which we now take up. One regards intuition as being what a later school has called "Common Sense" or "Reason," the other identifies it with the conceptual as distinct from the perceptual side of experience. Both lead to an erroneous view of Descartes' theory of method, and in criticizing them we shall hope to reach a true comprehension of his aim and thought.

(*a*) Many considerations show that intuition is not to be identified with "Common Sense" or "Reason." First, Descartes tends to describe intuition rather by means of images than in a systematic manner. Thus we may infer that for him the notion was not very clear cut or sharply defined, while this certainly is the case with "Common Sense." While this does not of course preclude our finding something in common between the two notions, it emphatically does show that to assert their identity is to read much into Descartes. Again, in the third Rule, he tells us that he uses the term intuition, not in its technical scholastic sense, but in its derived sense of looking into something. He goes on to point out that there are more things open to intuitive knowledge than might at first be imagined. For we can directly know that we exist, that we think, that a triangle is bounded by three straight lines, and many other such facts. It is this insistence upon the direct perception of elementary facts which constitutes the main methodological innovation of Descartes, and which conditions his whole point of view. And all this strongly suggests that by intuition he has in mind something far less systematic and sophisticated than "Common Sense" or

[1] *Op. cit.*, Vol. X. p. 368.

"Reason." This conclusion is confirmed when we find him speaking of intuition and deduction as the only valid methods of discovering truth, and condemning all other modes of procedure as being open to error. For intuition is now seen to be one among many ways in which it is possible to deal with facts, though it is the best of all of them, and hence it cannot be regarded as a special faculty for discovering truth. Thus we may conclude that when Descartes speaks of intuition, he is dealing with the actual practice and procedure of the expert investigator. The expert will develop and possess a power of immediately perceiving the essential factors of a complex situation. And no doubt Descartes found this to be the case in his own mathematical studies.

The interpretation of intuition as being in essence what a later school called 'Common Sense' is suggested by much that we find in the later writings of Descartes. All the methodological ideas with which he begins undergo a radical transformation as soon as the metaphysical interest becomes prominent, and among these the notion of intuition suffers a change. Even between the notion of the *lumen naturale* given by God, and the notion of 'Common Sense' there are obvious differences. But in any case it is absolutely necessary to interpret the later writings of Descartes in their historical and logical setting. And to do this is to see that it is gratuitous to ascribe to him a rudimentary belief in 'Common Sense,' which he called intuition. It is noteworthy that he uses the term intuition very little except in the *Regulae*. Elsewhere he deals with the same topic by means of a set of concepts and terms which are more or less misleading. And when we find him resolving his scepticism before knowledge by means of the activity of a good God, who illumines the mind by the light of reason, we have something that is superimposed upon the essentially methodological, and so non-metaphysical notion of intuition. And once more we are reminded of the practical meaning of the Cartesian philosophy, whose purpose seems to have been the description of the procedure of the ideal expert.

(*b*) It has been suggested by many commentators, among whom we may mention Boutroux (*L'Imagination et les Mathématiques*

selon Descartes) and Heimsoerth (*Descartes Methode der klaren und deutlichen Erkenntnis*), that intuition must be confined to what Descartes himself would speak of as *mens pura*, or what we may call the conceptual or rational side of experience. This is a point of very great importance for our understanding of the doctrine of intuition, and much that will be said later will center round it. For the moment we may make two observations, first that the passages which seem definitely to commit Descartes to this limitation are very far from being conclusive on the matter, and second that this limitation would seem to stultify the essential purpose of the method.

(i) Let us take his famous illustration of the wax, which occurs in the *Meditations*. Here he points out that when we perceive a sweetness or an odor or a color, we do not have knowledge of the wax itself. For he says the wax does not consist of these perceptual properties, but rather it is a body which is made apparent under various modes. And he concludes that it is necessary that we perceive the nature of the wax by means of the mind alone.[1] This would seem at first sight to mean that for Descartes intuition must be confined to reason or *mens pura*. But it is to be carefully observed that what he denies is that knowledge of the various properties is knowledge of the wax. He did not and could not deny that knowledge of them was knowledge, and thus that perceptual knowledge might also be intuitive. In fact in the twelfth Rule we have a passage which issues in a precisely contrary assertion, for there we are told that in perception and sense we have the understanding at work under certain conditions. Thus sense knowledge is genuine knowledge, but knowledge obtained under certain conditions, and determined by the action of a physical mechanism.

(ii) The limitation of intuition to reason would in effect stultify the entire method. We have seen that the *Regulae* is to be regarded as a sort of methodological introduction to the *Geometria*. And the main notion of the latter work is the introduction and elaboration of the use of coördinates. In epistemological terms then, we may say that the *Geometria* is concerned with the prob-

[1] *Op. cit.*, Vol. VII, pp. 30–31.

lem of how to use perceptual knowledge in order to deal with general and abstract problems. And this would seem necessarily to involve the admission that it is possible to arrive at some sort of genuine knowledge in perception. For these reasons then it would seem that the attempt to limit intuition to the rational or conceptual side of experience is mistaken. It is merely the name for the type of knowledge or procedure which marks the work of the expert, and it cuts across the distinction of perceptual and conceptual knowledge.

A further misunderstanding of the doctrine of intuition is involved in the question as to whether Descartes ought not to have sought for deductive rather than intuitive certainty in dealing with mathematics. But while Descartes is very far from ignoring the importance of deduction, he deals with it in terms of intuition, which he regards as the more fundamental notion. He would insist that the mathematician must proceed by means of intuition if he is to arrive at valid results. By this he must not be understood to mean that mathematical intuition consists first and foremost in the ability to envisage a complex problem at a single glance. It would be wrong to suppose that he has in mind what Schopenhauer speaks of when he tells us that for him *The World as Will and as Idea* was a unified, though enormously complex judgment, or what Bosanquet means when he says that the distinction between inference and judgment is merely the number of elements involved. For Descartes the distinction between intuition and deduction is precisely that between a static and a dynamic element of experience. Deduction is a serial intuition, and is based wholly upon the power of the expert to make clear and distinct every step of his procedure. Intuition, we are told on the one hand, is easy, and on the other, it is the main secret of procedure (*principium artis secretum*). That is to say, the expert is one who is able to analyze a problem in such a way as to arrive immediately at its simple elements, which are then quite obvious, though without his guidance they might always remain obscure. Expertness, in mathematics as elsewhere, is essentially a matter of arriving at the constituents of a problem. And the power by which we make a synthesis of these

clearly defined elements is *deductio* or *inductio*, which latter might well be translated inference. It is notable that in practice this consists in what Descartes calls enumeration, that is to say, the running over one by one of the relevant elements, and that its certainty arises from memory. Once more, then, we see that the true meaning of intuition is always a description of the manner in which the expert will deal with a problem in breaking it up into its constituents, each one of which becomes so clear cut as to make possible a final and convincing synthesis.

Such being in general the nature of intuition, let us now raise another question, and ask what is the characteristic object of intuitive knowledge. We find that intuition will always be directed to what Descartes calls simple natures or simple essences. These are objects which are clear and distinct, that is to say, ultimate in the sense that they cannot be further divided by the distinction or reason. And here we find important confirmation for our claim that we must admit the legitimacy of perceptual intuition. For we find simple natures classified as being corporeal, spiritual, or both.[1] This is the same as the distinction between things and truths, which is made explicitly in his later work. And it is evident that he must admit that corporeal natures call for perceptual knowledge, so that we have intuition in the sphere of perception.

Descartes' treatment of simplicity exhibits a certain inconsistency which is symptomatic of a far reaching weakness in his methodology, and which is of interest here in that it throws light upon the general bearing of his notion of intuition. First and foremost he treats simplicity from what we might call the epistemological point of view, in that he defines a simple nature as the object of a particular type of knowledge, namely intuition. But in addition to this he deals with it from the point of view of logic, regarding a simple nature as being essentially an entity which possesses logical priority. That is to say, in the solution of any problem there will be some entities which will come first, as being inferentially prior, or indefinable. And we are told that other elements are determined as regards their degree of sim-

[1] *Op. cit.*, Vol. X, p. 399.

plicity or absoluteness by the number of steps which esparate them from the original postulates of the system in question. He defines the absolute (*absolutum*) as "whatever contains in itself the pure and simple nature which is in question." And correspondingly we are told that the relative (*respectivum*) is such that it must be referred to the absolute, and deduced from it by an inferential series.[1] This is a quite notably close approach to the modern point of view of postulate theory. But Descartes failed in this essential regard, that he did not cut loose sufficiently from the particular mode of dealing with a problem which appealed to him, and did not generalize his own practice enough. Systematically, this failure manifests itself in the absence of any sharp distinction between the two quite disparate notions of simplicity, and in a confusion of the logical absolutes with the unavoidable data of experience; whereas the logical absolute is a matter of arbitrary choice, so long as it gives good results and satisfactory solutions, and may be very far removed from anything that it is possible to know by any sort of immediate intuition. It is necessary to see that intuitive and logical simplicity are distinct notions, though there may be a certain relation between them in many cases. Practically, this failure manifests itself in the assumption which Descartes tacitly makes, that the only fruitful way of dealing with a problem is that which he himself finds successful, whereas a problem will in a sense have as many solutions as transformations.

In connection with this study of the nature of the objects of intuition, we may remark in addition that the simple natures will always be universals. They are arrived at by means of the distinction of reason. We are aware of them at the point where it becomes impossible, by the distinction of reason, to divide the object of knowledge any further. And this process of abstraction is one of generalization. "It is impossible to make any abstraction save from something that is less general."[2] And this would certainly seem to involve the admission that the results of this process must be universals, a conclusion which

[1] *Op. cit.*, Vol. X, p. 381.
[2] *Ibid.*, Vol. X, p. 458.

is confirmed when we consider the various lists of simple natures which we find in the *Regulae*, and elsewhere. Thus he admits in effect that when our mental content is free from confusions, it must consist of universals. Indeed he gives it as his opinion that while from the naïve point of view each individual thing with all its properties is a simple, the scientist must regard it as a complex of universals. This is brought out in his example of the magnet, where he tells us that in order to deal with the phenomena of magnetism on a scientific basis, we must grasp the various simple natures whose compounding goes to make up what we call a magnet. This is practically the view of scientific method which is advocated by the modern logico-analytic school of philosophy, and it is to this that the Cartesian doctrine of intuition leads.

II. Intuition and the External World.

It is clear that a methodological discussion which moves along the lines which we have indicated must quickly culminate in a raising of the epistemological problem proper. As soon as we begin to be concerned with the object of intuitive knowledge, the question as to the reality and externality of the world with which intuition brings us into contact becomes pressing. Especially is this the case when we are dealing with a perceptual intuition which consists in clear and distinct knowledge of things. And it is this question which we must now consider. There are, however, two points on the borderline between methodology and epistemology, which must be taken up in order more clearly to define the issue before us, before passing on to the problem of externality itself. First we must consider the relation of perceptual intuition to knowledge in general, as it is seen in the analysis of experience, and second we must take the structure of perceptual intuition itself.

(*a*) In the comment on the fourteenth Rule we find a most interesting analysis of experience designed to show that imagination, by which is meant perceptual intuition as we find it employed typically in geometry, must be a useful, if not an indispensable agent in the solution of general problems. Descartes begins

with a reference to his doctrine of recollection, saying that the learning of a new fact is not unlike calling to mind something previously known, but since forgotten. In general, progress in knowledge will consist in making explicit what was previously implicit. In detail this process must be carried on by means of comparison, which is the rationale of all thought. Thus, when we have a syllogism in *Barbara*, we compare a *quæsitum* with a *datum*, with respect to a middle term. So it is that all science must proceed by means of comparison, and a large part of its task will be to prepare the way by an elimination of the "relations and ratios" which complicate our "common nature" (the middle term), so that comparison may go on, and uniformity (*æqualitas*) be established between the *quæsitum* and the *datum*. But this uniformity can only be established by means of the concepts of greater and less. So we must be able to express our problems in terms of continuous magnitude in general; and since nothing can be affirmed of magnitude in general which is not true of magnitude in particular, we must reduce the matter to terms of particular magnitudes, for the sake of facility and certainty. And this analysis of experience issues in a demonstration of the importance of imagination, when Descartes tells us that he hopes to gain a great advantage by reducing questions concerning magnitude in general to terms of that sort of magnitude which is most easily represented in imagination. The conclusion then is that experience is by nature such that imagination or perceptual intuition can be used effectively in dealing with general problems.

(*b*) Such being the relation of perceptual intuition to scientific knowledge in general, the next question is that of the structure of perceptual intuition itself. This we find discussed in a passage in the twelfth Rule, where Descartes is considering the distinction between perceptual and conceptual knowledge. He explicitly warns us not to regard the scheme which he there proposes as an attempt at serious scientific accuracy, but only as a sort of illustration or working hypothesis, designed to make matters clearer. The account begins by explaining that the stimulus from the sense organ passes through the nervous system to the

sensorium commune and the *phantasia*, which themselves are parts of the neural structure. In its passage it modifies the whole system to some extent. And in this notion of perception as essentially conditioned by a physical mechanism we have the logical basis of conscious automatism. It is evident that Descartes comes near to holding all perceptual knowledge as being merely the adaptation of a physical organism. But he insists that the mind, which is the organ of knowledge, is not to be thought of as situated at the end of a chain of special sense, common sense, imagination and memory, but says rather that it is parallel with the entire physical process. So while perceptual knowledge is physical as regards its conditions, a fact which marks it off from conceptual knowledge, it is nevertheless genuine knowledge in that here we have the mind functioning, though under the conditions imposed by the constitution of the organism. It is important to be clear on these two points, that perceptual knowledge is knowledge properly so called, and that it is essentially conditioned by a physical organism.

It is this psycho-physical account of the nature of perceptual knowledge, and its distinction from conceptual knowledge that brings us to the heart of Descartes' treatment of the problem of externality. For it is in terms of this discussion that he decides what sort of object is typical of and necessary for perceptual intuition. We already know that this object will be a simple nature, because it is to be the object of an intuition, and also we know that it will be a corporeal nature. But now we are in a position to go a step further in its characterization. In the same passage from the twelfth Rule Descartes goes on to say that the external sense perceives by means of passivity, and by passivity he has in mind a very definite physical notion. The wax is passive with reference to the seal. And this is no mere metaphor, but an actual account of the way in which the external sense functions. "We must hold that the external form of the sentient body is really modified by the object in the same way as a change is produced in the superficies of the wax by the seal." And this, he says, is not the case with touch alone, where it seems most evident, but also with all the ex-

ternal senses. Thus Descartes arrives at the conclusion that the physical conditions of perception are such as to make it necessary that the typical object of all perceptual intuition shall be figure. And the significance of the schematic connection of special sense, common sense, imagination and memory is to show that figure is, as he puts it "carried off" from the organ of external sense to various parts of the neural mechanism, thus making figure essential to all sense knowledge. We may remark that while Descartes regarded figure as essential to perceptual knowledge, it is not correct to say that he regarded it as essential to mathematics. The passage which we have just been considering is written with the object of showing that if geometers employ figure in their work, they are using something that is exceedingly congruous with perceptual knowledge, and thus likely to help them. But he was well aware that it is quite possible for mathematics to proceed without figures, and, as has been pointed out, the aim of analytic geometry is not so much to extend the use of intuitive aids, as to limit and make it more discriminating.

The precise point of view from which Descartes, as a philosopher of science, will be led to deal with the problem of the external world is now evident. He must raise the question as to the objective reality of figure. But as soon as this point comes up, we are aware of a most serious ambiguity in his use of the term *figura*. For sometimes it would seem to refer to what he specifically calls *nuda figura*, which may be taken to mean geometrical figure, and sometimes it refers rather to the superficies of bodies. Thus our question is divided into two parts, and we consider first the objectivity of geometrical figures, and second the objectivity of superficies.

The question as to the objectivity of *nudae figurae* is not one that is very important for this discussion, and could well be passed over, had not J. S. Mill asserted that for Descartes they were independently existing entities.[1] But this certainly needs qualification. In the *Discourse*, in the sixth *Meditation*, and in the *Replies to Second Objections*, we find him insisting that only

[1] *Logic*, bk. V, ch. 3, sec. iii.

the idea of an infinite being can guarantee existence, while the idea of a finite being can give us only possible existence. Thus logic does not demand that we regard geometrical figures as real entities on the ground that they can be conceived. And the fact that sense knowledge is in some way involved in their use is very far from deciding the case. In the first place, it is imagination which gives us geometrical figures, and the object of imagination may presumably be non-existent. In the second place, even when some figure is actually drawn, Descartes never tells us whether he regards this as the figure, the triangle or whatever it may be, itself, or an approximation only, or some sort of perceptual representation. While we may agree that sense-knowledge certainly does come into play, the precise sense in which it is used, and its precise relation to the figure as an abstract relational scheme is left quite unconsidered. And in the third place, as we shall see in a moment, sense knowledge in no way guarantees the real existence of its object.

The question as to the objectivity of superficies is much more interesting, for here we are led directly to Descartes' positive view of the external world. When dealing with superficies he finds himself in a dilemma. On the one hand, he expressly denies the reality of superficies. It is neither part of a body nor merely the common limit between one body and another. Thus it is not real but modal. But, on the other hand, the demands of physics, and indeed the demands of all experience are such as to demand a plurality of bodies. To break down the heterogeneity of the universe would be to close the door to all science and to all mental life of any kind. But it would seem that the denial of the reality of superficies must issue in precisely this effacement of all difference. For it is usual to distinguish between bodies in contact in terms of their superficies. This antinomy Descartes resolves by introducing another criterion of individuality, a dynamical criterion. We find this worked out in a most interesting and significant manner in that part of the *Principia* in which he deals with the fundamentals of physics. He defines an individual thing as "all that which is transferred together." Thus transference, or motion, is the principle of differentiation

in the physical universe, and his whole account of motion is thoroughly relativistic. In it we find the fundamental physical principle, for the world is conceived as a complex which is differentiated by the mutual motions of its components, and it is by this means that he obtains heterogeneity in the external world, which goes by the name of *extensio*.[1] If we take this discussion in connection with the comment on the fourteenth Rule we see clearly his point of view in this whole connection. For there we are told that extension actually means the possession of a definite locus, so that the external extended world is essentially a complex of matter which is differentiated and in fact made a world of possible experience by virtue of motion. And it is this world to which we are introduced when the external sense comes into contact with it.

So the narrow question of the reality of superficies at once opens out into the question of the reality of the entire complex which constitutes the datum of sense knowledge, and which we call the external world. In what sense, if any, will Descartes regard this complex as real or objective? It may appear that the answer is not far to seek, and that all we have to do is to refer to his well known scheme of thinking substance, extended substance, and uncreated substance. But there are reasons for supposing that this naïve realism did not represent his true position. We have already seen that many doubts may in general be cast upon his metaphysics. And more specifically we find that he was keenly aware of the difficulties of just such a theory of perception as he advanced, the theory which is usually taken as his characteristic and central position. Moreover, his view of intuition as the organ of science called for a very different solution of the problem of externality. We have seen that his notion of perceptual intuition arose in connection with his dualism. Of that dualism we have the first specific trace in the passage in the twelfth Rule to which reference has already been made. There he writes as follows: "For a knowledge of things, two factors are to be considered, we who have the knowledge, and the things themselves which are known." And he

[1] *Op. cit.*, Vol. VIII, pp. 53 ff.

goes on to say that while he would like to give a full account of the first of these factors, and explain what mind is, what body is, and how it is informed by the mind, this is not possible, and he must be content with the schematic outline which we have already noticed. Thus the dualism begins as a dualism of mind and brain rather than of mind and matter, a psycho-physical rather than an epistemological dualism. And from the functional point of view it appears as a dualism of two kinds of knowledge, perceptual and conceptual. It is only when other motives come in later that the true epistemological or metaphysical dualism makes its appearance, and that we find discussion being carried on in terms of knowledge and its object. Thus what is perhaps the most cogent reason for regarding Descartes as finally and unequivocally pledged to a naïve realism is dissipated.

It is of course very easy to attribute to Descartes quite an uncritical belief in the independent reality of the world of perceptual intuition. And we can find in his writings many admissions to this effect. But in the first place, what may be spoken of as his true view, true at least in being consistent with the requirements of his methodology, was never worked out very explicitly and is to be found in suggestions rather than in extended exposition. And secondly his literary method was such that, in using the terminology of ordinary life rather than a technical instrument, he should often suggest theories which he did not hold. And the fact that we find him continually throwing doubt upon the reality of physical objects, and refusing to accept this as a necessary assumption, though admitting that it was a natural one, goes to show that he was by no means so naïve in his approach to the problem of externality as various damaging admissions would suggest. In speaking of his method of doubt he writes, ". . . We doubt in the first place whether any of the objects of sense or imagination exist. . . ."[1] And this cannot be dismissed as a piece of metaphysical supererogation, for the reasons he gives are the eminently cogent and sane ones of the uncertainty of our senses and the possibility of

[1] *Ibid.*, Vol. VIII, pp. 5–6.

hallucinations. And in the *Meditations* we find this critical doubt directed against precisely that naïve common sense dualism which is supposed to be the characteristic Cartesian theory of the external world. In the sixth Meditation he points out that the copy theory of knowledge is nothing more than tentative at the best. On the assumption that material things exist, he says, the difference between conception and perception might be that in the former the mind is directed to things within it, while in the latter it is directed to things without it. But clearly this turns upon the assumption of external existence. And Descartes insists that perception, or perceptual intuition, furnishes no ground for such an assumption. Even though certain considerations would seem to support it, it can only be accepted with the greatest caution. For always we are liable to the deception of our senses, and always the phenomena of dreams and hallucinations present a difficulty. And even if we are to allow the external existence of the objects of which we have perceptual knowledge, this would not carry with it a copy theory of knowledge, and the relation between the object and the percept would still remain a problem. In the third Meditation he makes three points against the apparently natural hypothesis that our adventitious ideas are copies of independently existing entities. First we must distinguish between the spontaneous inclination which makes some beliefs seem plausible, and the natural light which gives valid certitude. It is to the former rather than to the latter that our belief in independent existence and the copy theory is to be attributed. We may note in passing that this distinction between assurance and certitude presents a formidable difficulty for his theory of knowledge. Second, the fact that our adventitious ideas are to a great extent beyond our volitional control is no proof that their cause is external to ourselves. For it is quite possible that their arbitrary nature arises from our own constitution which cannot be altered at will. Third, even if we admit that these ideas arise from some external and independent cause, this is no proof that they are copies of that cause. On the contrary, we find the greatest divergence between different presentations of the same object, as when a

tower looks at one time round, and at another square, at one time large, and at another small. Thus to sum up we may say that Descartes, in spite of inconsistent remarks, was well aware that the assumption of independently existing entities and a copy theory of knowledge constituted a problem rather than a solution, and that it is impossible to attribute to him a naïve belief in the external reality of the world of perception.

Finally we may point out that even if we allow the introduction of a God whose goodness guarantees the validity of perceptual intuition, what Descartes might actually have claimed to establish by this questionable piece of metaphysics would be only the reliability of sense knowledge. But for him reliability does not mean objectivity or truth. He explains the notion in the sixth Meditation. "For I see that in this as in other similar things, I have been in the habit of perverting the order of nature, because those perceptions of sense having been placed within me by nature solely for the purpose of signifying to my mind what things are beneficial or hurtful to the composite whole of which it forms a part, and being up to that point sufficiently clear and distinct, I yet avail myself of them as if they were absolute rules by which I might immediately determine the essence of the bodies which are outside me, as to which in fact they can teach me nothing but what is most obscure and confused." Thus reliability receives a behavioristic interpretation, and is seen to have little or nothing to do with objective reference.

Thus we see that Descartes' general approach to the problem of externality, as conditioned by his methodology, would tend strongly in the direction of subjectivism of some kind. This might be expected from his view of the nature of intuition and of the requirements of science. For he lays far more emphasis on certitude than on truth. Indeed he goes so far as to tell us that if an idea is clear and distinct we cannot help regarding it as valid or true. But while we can say with some assurance that the theory usually ascribed to him was not one which he could take very seriously, it is true that he had no other consistently and explicitly worked out. All that we have is in the form of suggestions. Perhaps the nearest approach to a constructive

solution which we can find would be to take his notion of the data of intuition as being universals in connection with his view of extension as essentially a relational complex of spatial type. This would at least suggest a theory of externality to be worked out along the lines of treating a real object as a complex of perceptual qualities with a determinate spatio-temporal locus, and it would exhibit the connection between Descartes, himself a mathematical philosopher, and the modern logico-analytic tendency.

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REVIEWS OF BOOKS.

The New Rationalism. The Development of a Constructive Realism upon the Basis of Modern Logic and Science, and through the Criticism of Opposed Philosophical Systems. By EDWARD GLEASON SPAULDING. New York, Henry Holt and Company, 1918.—pp. xviii, 532.

However great may be the toll which time exacts of creeds as well as doctrines, man's interest in formulating them is deep-seated and abiding. As Socrates so long ago observed, it is an essential human trait to attempt to fathom the meaning of one's existence and to discover the nature of the world—both physical and social—with which man must hold commerce and with which his fortunes are so intimately interwoven. These attempts may take the form of emotional or mystical contemplation, of rigid deduction from accepted truths, or of generalization and interpretation of observed facts; they may issue in myth, poetry, declaration of faith, or reasoned statement. But some adoption of principle, some direction by ends and values consciously entertained, some comprehension of the meaning of the world and of life is universal to human conduct. It is in this sense, and in this alone, that every man may be said to have a philosophy.

Philosophies, moreover, are significant and time-defying in precisely the degree in which they enrich and purify the springs of personal and social life, deepen and clarify man's insights into the meaning of his world, and extend the boundaries of his comprehension and his sympathies. These are the sources of philosophy's vitality and prestige. Yet the 'professional' philosopher not infrequently fails to take this fact into account. In the interests of 'philosophic' advance, he inclines to the adoption of an esoteric technique and terminology and then proceeds to ostracize the non-conformist from the school of philosophers—a fate which brings suffering to the outcasts only because they have all that reverence for philosophy which human society generally, with the occasional exception of the 'professional' philosopher, has always had and will ever maintain.

Our present age, with its release from ancient moorings, its restlessness, discontent, pervading cynicism, and explosiveness, needs nothing more than a sound and convincing interpretation and doctrine of

life, as an essential constituent of, and an indispensable guide to, a genuine and rational human existence. Such a philosophy, however, must grow out of the historical development; it must spring from the currents of life itself.

In his present volume, Professor Spaulding manifests himself as a professional philosopher, and unquestionably as one of high rank. He is in part animated, as he states in his preface, by the desire to combat the tragically erroneous philosophy which actuated the recent attack on civilization. This philosophy and ethics, he—not being an orthodox pragmatist—describes, not as absolute idealism, but as naturalism. Unfortunately, however, he does not proceed to inquire into the precise character of the particular attitudes and doctrines involved or into their setting. Instead of dealing directly with them in the concrete, he, having designated them 'naturalistic,' undertakes a logical and abstract analysis of naturalism. And the naturalism which he analyzes is not one that "exists" in actual life or even in theories as actually developed by philosophers in the course of history; it is one which, in the purity and nakedness examined, merely "subsists"—it is the doctrine which logically is naturalism. The results, however cogent and however important, cannot in the nature of things do much in the way of clarifying or bettering the conditions of contemporary life. Indeed, only a rationalistic bias can conceal the fact that it is through appeals to emotion, interest and purpose that conduct is directed, rather than through the dispassioned presentation of a logical argument. Professor Spaulding is persistent and unflinching in his assaults on relativism and humanism, whether in the field of morals or of truth. He staunchly and consistently argues that there are eternal and unchanging verities, principles and ideals which man must discover, acknowledge and adopt as guides to action if all is to be well with him. Yet the discussions of ethics and social life are quite subordinate, and the speech lacks the gripping qualities of eloquence. This, together with the fact that the treatment abstracts from the historical development and setting of issues and relates to logically formulated theories, rather than to concrete philosophies as actually entertained prevents the author from doing all that can be done toward revealing the truth of human life and toward transforming this truth into the fabric of institutions.

But it is not so much with attack as with "philosophical refutation" and, be it said to his large credit, with philosophical construction that Professor Spaulding is concerned. His inquiry is an evaluation of doctrines regarded merely as expressions of what purports to be truth

and therefore in abstraction from their historical development, their cultural setting, their meaning to those who formulated them, or their relation to the remaining doctrines of the same philosopher or philosophical system; further, it is an effort to determine whether there is not a set of principles logically presupposed by all philosophical systems; and, having come to an affirmative conclusion in this matter, the author attempts to develop this set of principles into a philosophical system by the use of the new logic of relations and of the methods and results of modern science. Such a program requires not merely wide learning but also splendid intellectual courage, and these qualities will be cheerfully conceded to the author even by those who may receive an occasional shock because of inaccuracies and errors in matters that fall within the history of philosophy.[1]

All philosophies other than the new rationalism are traced by the author to a common source, namely, the Aristotelian logic. This logic, however, is said to be dominated by the "thing-concept" and

[1] To give a number of illustrations: On p. 10 Fichte is said to have assumed a "substance-like, underlying entity." On p. 59 it is declared that pantheism, as well as deism and theism, holds to the "fact both of purpose and a Purposer" and teaches that "this Purposer is external to that to which purpose is given." (Spinoza is cited in illustration.) Höffding is interpreted (p. 61) as maintaining that there is a "power, not ourselves, that makes for righteousness." The note on p. 108 mentions Descartes, Spinoza, Leibniz, Fichte, and Hegel as teaching that logical principles and categories are "subjective or psychical entities that are attributes of and that inhere in the knowing mind" and that are "read into" the realm of known things "by the *causal* influence of the *knowing* on that which is (to be) known." Of Kant it is said (p. 217, n.) that he regards the knowing self as "a substratum-like entity in which both *a priori* concepts (categories) and empirical experiences (sensations and ideas) inhere"; and that he believes the "original" self "can be known in its real and genuine character" (p. 220). Bergson is mentioned as a positivist (p. 247) as well as as a pragmatist (p. 307, n.). Pratt is included among the pragmatists (pp. 284, n. and 307, n.), as also is Baldwin (p. 307, n.). It is said (p. 308) that for Spinoza physical entities and all other entities are "in some way psychical or mental in nature, especially as identical with the mental 'contents' of some Absolute Mind, Self, or Spirit." The note on p. 312 includes Fichte, as well as Beck and Schulze, as implying that at least some things, or things-in-themselves, "act causally on a thing-like ego to produce sensations;" the note on p. 322, referring to a doctrine of Fichte's, states that its demonstration is to be found "all through his *Wissenschaftslehre*, Werke, Vols. I and II. It is repeated in many forms and ways, and one reference is as good as another." Recent studies have made it compellingly clear that there are very marked differences in the Fichtean philosophy even during the so-called first period, to say nothing of the philosophy succeeding 1800. Eucken's philosophy is said to be a "Universal Vitalism of Romanticism" due "to the influence of the concept of biological evolution and of the science of biology" (p. 342). James's *Varieties of Religious Experience* is placed under the "general works on mysticism" (p. 407, n.).

therefore to issue in systems whose structure is determined by the notions: of substance, as a substratum in which qualities inhere; of causality, as the action of thing upon thing; of classes, as the grouping of things on the basis of similarity and dissimilarity; of the additive relation, by virtue of which wholes have only those characteristics possessed by the constituent parts. The systems based on these implications of the Aristotelian logic are fundamentally two: (1) causation philosophies (represented by phenomenalism, subjective idealism, positivism, naturalism and pragmatism), and (2) substance philosophies (represented by objective or absolute idealism, panlogism and ethical idealism, voluntarism, and vitalistic and romantic idealism). The most fundamental difference between these two sets of philosophical systems is found in the fact that, while both uphold the doctrine of internal relations, the one, emphasizing the universality of the causal relation and of interaction, holds to "the mutual modification" theory of relations, while the other, under the influence of the concept of substance, holds to the "underlying—or transcendent—reality" theory.

It is not likely that the objective idealist of today would recognize the lineaments of his philosophy as these are sketched by Professor Spaulding, and the subjective idealist would be surprised to learn that he was understood as believing that "knowing *makes* or *creates* its objects *completely*" (p. 237.) But, having concluded that all philosophies but his own are based on the logic of the "thing-concept" and that their central feature must therefore be the concept either of substance, in the common-sense meaning of the term, or of causality, in the dynamic sense, the author seems to pay little regard to what is actually maintained, contenting himself with an elaboration of the principles which would logically be associated with these concepts regarded in abstraction from all else. The result is a treatment which is not merely highly abstract but, in spite of great acuteness, somewhat barren and unconvincing. The essential and the common difficulty in the causation philosophies is found in the fact that they affirm themselves to be true and, in addition, affirm certain things to be matters of fact, while yet teaching that to be in the knowing relation is *ipso facto* to have undergone alteration. The systems, therefore, are self-refuting inasmuch as they assert that the act of cognition affects the content and yet, by presenting themselves as true, they presuppose that the known object, though related to the act of knowing, is nevertheless independent of it and unaltered by it. The substance philosophies are described as monistic systems maintaining that

reality is ultimately an "Absolute One," and that this principle of unity, which is necessary in order to relate the manifold, is "at a different level, either transcendent to or underlying" the manifold. These philosophies are then likewise characterized as self-contradictory, on the ground that, according to their doctrine of relations, a unity would be required to relate the postulated unity to the manifold, a further unity to relate this unity, and so on *ad infinitum*. If, that is to say, there is to be a series or system, it must be because the relation itself, though external to the terms, is presupposed, in the last analysis, as adequate for the purpose, though this is precisely what substance philosophies are most concerned to deny in their teachings

All philosophical systems are thus shown to imply that there are some items of knowledge, and thus some instances, in which the thing as known is precisely the same as it is outside the knowledge relation; that relatedness does not imply dependence; and that, while there is an ego-centric situation, there is no ego-centric predicament, inasmuch as it is both possible and legitimate to employ analysis *in situ*, to examine the nature of objects without reference to the fact that they are objects of or for a subject. These truths, represented as presupposed by all philosophical systems, are then taken as the basis of the new rationalism.

In its structure and development, this philosophy is based on the modern logic of relations as opposed to the logic of substance—on the logic dealing with symmetrical, asymmetrical, transitive and intransitive relations, with types of order, series and variables, which latter are related, not causally, but functionally. The cardinal doctrines are: Knowing and consciousness are related externally to, are independent of, other entities. (Hence, realism.) In spite of the ubiquity of the ego, therefore, the knowing situation may be examined by analysis *in situ*. While there are situations in which the older methods of analysis fail or lead to antinomies, analysis is not thereby proven invalid, as Bergson, for example, argues, for there are newer methods of analysis, as found more particularly in modern mathematics, and these have demonstrated their adequacy. (Hence, the "*new*" rationalism.) Knowing and known object may be qualitatively different, each being precisely what it is found as, whatever the variety either of entities or of the relationships that obtain between them. (Hence, ontological pluralism.) Illusions may be objective—and the author interprets them as such. (Hence, pan-objectivism.) Objects may be genuinely known; they may be unknown (though not unknowable), may become known, or may cease to be known. (Hence, absolutism.)

With not a little skill, and with great suggestiveness, Professor Spaulding develops the system of general principles involved in these propositions and thus comes to grips with the questions of ontology, cosmology, epistemology and psychology, and, somewhat sketchily and with doubtful success, with certain fundamental questions of value, teleology, and theology. Ontological status is given not merely to existents (defined as physical or mental entities which occupy a particular space or time, or both, and have in addition "that full quota of characteristics, or be that full quota, which the sciences of physics, chemistry, biology, psychology, and the like, find it empirically to have" (p. 491)), but also to subsistents—entities discovered by reason, though also by dreaming and by the waking imagination. This is a vast realm, including such diverse entities as relations, classes as such, numbers, space, time, logical principles, series, infinity, continuity, terms and qualities; also some entities contrary to existent fact, such as *perpetuum mobile*; "false" hypothetical entities, such as phlogiston; imagined entities, such as centaurs and satyrs; illusory and hallucinatory objects, such as the 'snakes' of tremens; and, in addition to the foregoing, ideals of all sorts—justice, mercy, etc., in distinction from the existents, just and merciful acts. An attic is indeed a convenient place to which to consign whatever cannot otherwise be readily disposed of, but, in connection with Spaulding's realm of subsistents, questions such as the following arise: (1) How reconcile this changeless order with the facts of evolution and of time? (2) How relate it to the order of existents—justice, for example, to just acts? (3) Is it really intelligible to speak of subsistents as possessing "agency," "efficiency"? (Spaulding cites the case of men "actuated by ideals that have never yet received concrete existential form." But are not the ideals, when and in so far as they are efficient or actuating, mental *existents*, and not subsistents?) (4) With existents and subsistents so diverse in character, what meaning can be attached to the doctrine that "God is the totality of values both existent and subsistent, and of those agencies and efficiencies with which these values are identical" (p. 517)? (Further queries: According to this view, what is the relation of God to man? And how can one say: "Accordingly, if God is personality, He is also more than personality," etc. (p. 517)?)

To the reviewer one of the most characteristic and significant features of Spaulding's new rationalism is its empiricism. The ontological pluralism has already been mentioned. Further empiristic tendencies are: (1) The admission that, while truth is found and not

created. a most successful way both of finding and of testing it is through experimentation and the processes of trial and error; (2) the rejection of the doctrine of internal relations; (3) the denial of the universality of implication; (4) the acceptance of the doctrine that "the mere 'givenness' of the co-presence of several characteristics establishes their consistency" (p. 490); (5) dependence upon experience and upon the empirical methods of science in determining what is existent; (6) the view that logic is an empirical science and that the various types of relations, classes, series and functions which form its concern are obtained through a process of induction. Empiricism of a very fundamental sort, moreover, issues from Spaulding's adoption of the three following principles: (*a*) "parts form wholes which manifest, or are, one or more qualities that are different from those of the parts"; (*b*) "new qualities are a law unto themselves"; (*c*) "one and the same entity can stand in several relations, and these relations are not constitutive of one another." It follows from these principles that the higher levels of realities and of organization can neither be reduced to or deduced from the lower; they can be understood only if observed and studied as found. In connection with Spaulding's clear insistence upon evolution as creative, however, one wonders at some of his criticisms of Bergson, particularly since he himse f regards the process as alogical and describes it as undeniably efficient in that it "produces," "causes," and "brings about" (p. 516).

The New Rationalism provides much stimulus for discussion but it does so because it is replete with thought and with suggestiveness. It may confidently be called a substantial contribution to contemporary philosophy. Unfortunately, it contains many typographical errors; the references to books and to authors discussed are frequently so general as to be of little value; and the bibliographies, though useful, require careful revision.

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Some Suggestions in Ethics. By BERNARD BOSANQUET. London, Macmillan and Co.; New York, The Macmillan Company, 1918.—pp. viii, 248.

This book is intended for "ordinarily thoughtful persons who are interested in reflecting upon morality." Though no friend to casuistry, Dr. Bosanquet considers that moral theory may dispel some perplexities by showing the assumptions upon which they are based to be untrue. Starting from the phrase 'living for others,' the first part of the book passes to an examination of the self and others, the nature

of the individual and of value, and the relation of goodness to value. The general point of view will be familiar to readers of the author's Gifford Lectures. In the second part these conceptions are applied to special difficulties and hindrances of the good, such as the relation of evil to perfection, the growing repugnance to punishment, and stupidity. The book avoids controversy, although the author often treads over hidden fires, and it is impossible not to admire the skill with which Dr. Bosanquet's dialectic seizes and uses permanent and significant elements, not only in Plato and Hegel, but also in writers with whom he is in less perfect sympathy. Dr. Bosanquet has always held firmly to the great humanist tradition, and a younger generation of philosophers, sometimes too absorbed in the technicalities of their craft, may well envy the insight with which he brings experience of life and literature[1] to bear on philosophical problems.

It may be objected—indeed it has been objected—that this book is casuistry with a difference, since it does attempt to set principles in relation to particular cases. But the point does not penetrate to the core of the author's position. Dr. Bosanquet, I take it, means by casuistry the *art* of applying general rules to particular cases, an art that reveals its mechanical nature in proportion as it achieves complete codification. On his view the function of philosophy is to understand its subject-matter, not to dictate. Much of the book applies a solvent criticism to the general conceptions which the ordinary man uses in judging or guiding action. In the first chapter, for example, the phrase 'living for others' leads to the master-conceptions of individuality and value, which are too formal in character to afford specific guidance. Or again the discussion on punishment attempts to disentangle its function from a mass of notions which have lately encrusted it "like some marine Glaucus": these notions are, it is contended, taken uncritically from current medical or biological theory, or influenced by false humanitarianism, or by imperfect analogies from the education of children. Is the result merely the substitution of good principles for imperfect rules, of good casuistry for bad? We may distinguish between the play of the judgment upon the actual structure of values which men have achieved and what Croce conveniently calls the *gusto pratico*, when the individual faces and must act in a unique situation, unique because his act is spontaneous and creative. It is the claim of any principle or rule to take command of the act that Dr. Bosanquet repels, because no principle "can tell you its own proportion of truth compared with others, nor when it is

[1] The 'author wanted' on p. 167 is Adam Lindsay Gordon.

right to attend to it, and when it would be better to think of things otherwise." This I take to be the position implied in Aristotle's doctrine that the φρόνιμος himself is the judge by reason of his achieved character, and it is one side of Socrates' figure of the midwife.

Dr. Bosanquet's main contention is that while values are impersonal, the individual feels and judges them. "They are imperatives or notes of perfection to which the persons as facts are subordinate." It is from this point that the various lines of discussion in the book radiate. I may touch on one or two to indicate his mode of treatment.

If on one side Dr. Bosanquet refuses to allow the past in the form of tradition or precept or creed to bind the present, on the other he regards any theory that progress is the end, or that immortality is a recompense for suffering or sacrifice, as showing a lack of faith and insight. Such views nullify the meaning of self-sacrifice—the note of the book is *Stirb'und werde*—and place before the finite individual a false ideal of perfection. The bearing of this view may be considered in the light of two examples.

It is asked what is the value of the many who "have lived faithfully a hidden life and rest in unvisited tombs." The error to be avoided here lies in considering them as means or instruments or in judging them as if they fell short of high achievement. The values that they have contributed and do contribute to the common stock give a color and character to the life of the whole. To touch one line of argument: our civilization has taken its form from men organized in families, in guilds like the builders of cathedrals, and in communities, all with a positive life and spirit of their own. "In all this medium of unity, which, though unreflective, is not subliminal, we have an undeniable human value of a direct and universal type, in which there cannot be a human creature who is not a partaker in some mode or degree." We may combine with this an instance from the most suggestive chapter on stupidity, in which the author quotes a friend as objecting to the description of Christ as perhaps a rather clumsy carpenter. Such clumsiness implies a lack of respect for the work and the material; but the crafts stamp those who practise them with an insight and veracity which lies at the base of social structure. The point is that the humble values, which are apt to be overlooked, "grow at every point into the general vitality which surrounds" them.

Dr. Bosanquet utters a plain challenge to those who consider that the school to which he belongs slur over the problem of evil. He cites almost with exultation that passage of Hegel which suggests

that evil is an illusion which prevails in all finite spirits, and lays bare what appears to him to be its relation to the old antithesis of Justification by Faith and Works. Evil is to be taken in the context of the finite individual's life, "made out of the same stuff as good; the stuff of life, its passions and values." Again the point is that we cannot deal with it by thrusting it out of relation to its context, and imagining a future conquest of an alien system by progress. "Evil is evil; once more, you have not to palter with this truth; but, all the same, it can be overcome; not at a distance, but now and here; and the secret of overcoming it is to feel that it is overcome, and to treat it practically as a conquered thing. Such is the faith of science in its battle with appearances; it does not suppose some to be intelligible, and some not. If it did, it could not work. And such must in effect be the faith of the good man, if he is in any place or time to overcome the world. He must not suppose that here and there he may light upon an absolute evil which is in principle a separate thing, unresolvable and insuperable" (p. 104). Here the author appeals from moralism, a "thing of theory," to that hope which men call salvation or liberation, the heart of great religions. Nothing was more curious or lamentable in the late war than the readiness of some teachers of religion to stake their belief in the goodness of things upon the Allied victory, as if our defeat would prove evil to be invincible. Whatever practical utility such an attitude may have, it carries religion back to Mount Carmel. It is against such faithless demands for the liquidation of evil that Dr. Bosanquet sets his account of 'liberation' as giving men the power to transform the immediate evil into good. "It is not an accident that 'morality' in a certain sense has been the *bête noire* of religion; not, for example, that Scott has put in the mouth of a woman of almost perfect saintliness such words as these: 'Mony a hungry, starving creature, when he sits down on a Sunday forenoon to get something that might warm him to the great work, has a dry clatter o' morality driven about his lugs.'" The strength of this view seems to lie in its refusal to make drafts on the future for rectification or compensation. It is not, I think, a valid objection to urge that the real difficulty is the fact that evil has a *spirit* of its own, hostile to the good. For if the principle of liberation has any power, must it not at least mean that such a spirit, however deformed, can be changed? We must in this discussion bear in mind the fuller argument in *The Value and Destiny of the Individual*, which subordinates the judgment of good to the judgment of perfection.

In concluding these notes on a most suggestive book, one would

like to ask gratefully for a fuller discussion on the definability of the good, some hints on Croce's theory that theoretical error is practical (p. 108), and some further guidance on the theory of education at a time when we are in danger of being made efficient by discarding many things of value.

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Teoria e storia della Storiografia. By BENEDETTO CROCE. Bari, Gius. Laterza & Figli, 1917.—pp. vi, 293.

This is the fourth and concluding part of the author's series entitled *Filosofia come Scienza della Spirito*, and the only part which has not been translated into English (the translation of Part Three has not yet appeared). We may hope that this part will soon be made accessible to English readers, for it is valuable in itself, and important among the writings of Signor Croce. Indeed, Dr. H. Wildon Carr, in *The Philosophy of Benedetto Croce*, declares that in Croce's conception of history we come on the "central idea and fundamental principle" of his philosophy, and in his Preface Croce says: "The problem of historical comprehension is that to which are directed all my researches into the modes of the mind, as to their distinction and unity, as to their truly concrete life, which is development and history, and as to historical thought, which is the self-consciousness of this life. In a certain sense, then to take up again, at a time when the circle of my labors on the philosophy of mind was completed, the subject of the writing of history, and to deal with it more fully then before, was the most natural conclusion that I could give to the entire work." The present book is an amplification of what had already been said in the *Logic*, and most of its contents had already appeared separately in Italian reviews in 1912–13. As a result, there is more repetition than would appear in a work written as a unit, and the parts are not always in the order easiest for the reader to grasp. Yet the general impression made by the whole is clear and deep.

The first part of the work deals with *The Theory of the Writing of History.* Here we read that "history [properly so called] is living history, chronicle is dead history" (p. 10). That is, history is real only when it is "contemporary," or a genuine product of the thought of the man who writes it. A book which is essentially only a collection of "sources" is not worthy of the name of a history, nor is "poetical history," which is a product of feeling and not of thought (pp. 19–22). "Universal history" cannot be treated, but the universal can be known through history; "history is thought, and, as such, thought

of the universal, of the universal in its concreteness, and therefore always particularly determined" (p. 49; see also p. 131, etc.). The "philosophy of history" is an abstraction, and destructive of true history, for, as Croce reiterates, philosophy and history are identical. "All the controversies . . . which philosophers, methodologists in history, and sociologists think their particular provinces . . . lead for us to simple historically motivated problems of philosophy, connected with all the others which philosophy treats" (p. 71). The problems of history are those of the life of man, and hence those of philosophy. Croce is a firm believer in unity, and hence insists that no part of the past can be adequately dealt with apart from the whole, and that distinctions can be made only for practical purposes. August Boeckh has told us that a man who studies any age should wholly reconstruct it, knowing not merely its political history, or its literature, or its philosophy, but all that can be known about it. Croce would agree, with the caution that "what man needs is to reproduce the past in imagination and rethink it while remaining in the present, not to uproot himself from the present to fall back into the dead past" (p. 254). But if he who concerns himself with the activity of the human mind in the past must do so in the light of an understanding of all its manifestations, this understanding cannot be an abstract metaphysics, for Croce is sure that there cannot be any universality except through the concrete and individual. Hence he declares that "a great advance in philosophic culture would tend to this effect: all who study human things, jurists, economists, moralists, philologists, all those who study historical matters, would become conscious and disciplined philosophers; and the philosopher in general, the *purus philosophus*, would no longer find a place among the learned professions." At least students of philosophy should not confine themselves to works on abstract metaphysics—as has been done as a result of the false belief in a "fundamental and unique problem" peculiar to philosophy. "The foundation of philosophy as history is all history, and to circumscribe his foundation to the history of philosophy alone, and of 'general' or 'metaphysical' philosophy, is possible only when there is an unconscious adhesion to the old idea of a philosophy not methodological but metaphysical" (pp. 145–146). Philosophy is, then, the methodology of the study of human affairs as they are, and does not offer an esoteric revelation. "To philosophy conceived as methodology ought to correspond a history of philosophy . . . which would consider as philosophy not merely what pertains to the problem of immanence and transcendence, of world and other

world, but all which has had the power to increase our patrimony of directive conceptions and our understanding of true history, and to form the reality of thought in which we live" (p. 148).

In the second part of the work, *An Outline of the History of Historical Writing*, Croce sketches the subject from classical times to the present, keeping always in mind his theory of the continual progress of the world. Partly, it may be, as a result of it, he gives higher praise to the historical works of the Middle Ages than we have generally been accustomed to hear, saying that just as "only the less cultivated and more fanatical among priests and Catholics in general" "defame Voltaire and the eighteenth century as the work of the devil," "only the vulgar democrats, similar to the others in anachronism" slander the Middle Ages (p. 250).

The work abounds with passages that attract attention, as the assertion that the belief of the Germans that they were the chosen people resulted from an abstract "philosophy of history" (p. 261), or the suggestion that the philosophy of value places "in opposition to the conceptions of science the conception of value as a protection for the mind, . . . 'like a philosophical *cave canem*'" (p. 285). The volume is vigorously written, is evidently the work of a learned and thoughtful man, zealous for the truth, and can furnish help, or at least food for thought, to most students of human affairs.

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NOTICES OF NEW BOOKS.

The Relation of John Locke to English Deism. By S. G. HEFELBOWER. University of Chicago Press, 1918.—pp. viii, 188.

To determine the existence and extent of the influence of one thinker upon another is a difficult task. In some cases, where doctrines peculiar to one man reappear in the work of a successor and where we have some direct evidence of relationship, the connections can be established with reasonable certainty. But the more we study the history of philosophy the more we find that such cases are exceptional. To help us in demonstrating a relationship we have, as a rule, two classes of evidence to help us: external, consisting of agreements and differences in method or idea; internal, consisting of definite admissions of indebtedness or hostility. But agreements and differences can give us, at best, only presumptive evidence of a real connection: they may be accidental, or due to some undiscovered source, or symptomatic of a cause upon which both thinkers are dependent. The internal evidence is ambiguous, because, since we do not know how the ideas of one man 'influence' another, B may confidently assert that he is a disciple of A when he is, as a fact, nothing of the kind, or, on the other hand, he may really have been influenced by A without knowing and consequently without stating it. In face of these difficulties the historian of philosophy, if he be circumspect, usually contents himself with giving us as it were the natural history of ideas and touches lightly on the human agencies of transmission. The result is that the account becomes vague where the actual influence of particular philosophers is in question.

It is a vagueness of this kind about the relation of Locke to English Deism that Professor Hefelbower undertakes to dispel in this study. He is not content with traditional estimates, such as that Locke is the "progenitor" of the Deists; that they are "the descendants of Locke"; that "from his theory of religion came Deism"; that Locke "has an honorable place in the history of Deism." He is in search of something more definite. His own thesis is that Locke and Deism "are co-ordinate parts of one and the same general movement." They "appear as different manifestations of the same spirit of the age, which was seen also in all other writers of the liberal party. . . . The resemblances between Locke and Deism are not those of parent and child, but rather those of fellow-members of the same family. They are related, and closely related, but their relation is not causal, nor do they mark different stages of the same movement."

In arguing in support of this conclusion Professor Hefelbower handles the problem of method with conspicuous success,—in fact the whole book may be taken as a study in the consistent use of an instrument of historical research. First, he catalogues the main points of agreement and of difference between

Locke and the Deists in regard to their use of the concepts of reason and nature and upon religious and theological problems. Secondly, he estimates the significance of these agreements and differences in the light of the ideas current among all liberal thinkers of the period. His conclusion is that what Locke is generally supposed to have contributed to the development of Deism might just as well have come from these other sources. The ideas were in the air; Locke had no monopoly of them. Where the characteristic doctrines of Deism are concerned it is their difference from, not their resemblance to, those of Locke that most clearly emerges. Third, he tests this result by a consideration of the internal evidence. "The internal evidence shows that Locke's influence on the deistic movement, when it was at its height, was small, that it was greatest in Toland and either negligible or without significance in the writings of Wollaston, Tindal, and Morgan, who wrote the most important and most characteristic deistic books. As the movement advanced, it seemed to get farther away from Locke, and either ignored him or assumed a critical attitude toward him, more especially toward his religious views."

This work has a twofold value for the historian of philosophy. First, a general value. It is a brief but an exceedingly detailed study. In a region where there is a great temptation to make hasty generalizations the author has held himself down to patient and arduous research among the discoverable facts. His work seems to me to bear the same relation to the ideal history of philosophy as the work of philologists bears to the ideal criticism of literature. Professor Hefelbower has done some of the hard digging for foundations without which stately buildings will not endure. The particular value of his study lies, first, in the sharpness with which he has defined the distinguishing marks of Deism, second, in the way in which he has brought out the conspicuous differences, hitherto little emphasized, between Locke and the Deists.

As far as a reviewer who has no special knowledge of the period may judge, the work has been competently done. It is thorough, the argument is presented with admirable clearness, and the author shows a nice sense of proportion in the balance he maintains between a justice to detail and a feeling for perspective.

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John Dewey's Logical Theory. By DELTON THOMAS HOWARD. New York, Longmans, Green, & Co., 1918.—pp. v, 135.

This doctor's thesis from the Sage School of Philosophy, published as No. 11 in the "Cornell Studies in Philosophy," is a timely work of interest and importance. The subject itself deserves careful treatment, and the treatment it receives is scholarly and on the whole judicial. Mr. Howard presents, largely in Dewey's own words, the views held by the latter at various successive stages of their development, going back to the first published articles in 1886. The progressive changes of the author studied are brought out clearly.

Dewey started, as almost every philosophical thinker beginning his work in the last decades of the preceding century in America did start, from what

is generally known as the neo-Hegelian position. From this position he worked his way, slowly and cautiously, to his present well-known immediatism and instrumentalism. As Mr. Howard points out in his preface, an historical treatment of Professor Dewey's logical theories is especially appropriate, "since functionalism glories in the genetic method. . . . At any rate, the historical method employed in the following study may escape censure by reason of its simple character, for it is little more than a critical review of Professor Dewey's writings in their historical order, with no discussion of influences and connections, and with little insistence upon rigid lines of development. It is proposed to 'follow the lead of the subject-matter' as far as possible; to discover what topics interested Professor Dewey, how he dealt with them, and what conclusions he arrived at." The volume thus presented forms a record of a very active facing of difficult problems, and a very temperamentally consistent series of solutions. The brief notice I can give here of the work makes it impossible to follow this development.

One thing of great interest to me, as brought out by Mr. Howard, is that Dewey's instrumentalism was first worked out for moral theory and then later extended to logical theory (pp. 33–46). This is what I had long suspected, knowing Dewey's earlier ethical writings; but I had never taken the pains to substantiate the impression. Mr. Howard's presentation makes it possible to hold, what he himself does not hold, that in instrumentalism we have a correct moral theory unwarrantably extended to fit all the facts of logic. Incidentally, it is worthy of remark, if this view be correct, that the unchecked tendency to universalize is dominant even in pragmatic thought.

In the critical passages of the thesis, I do not think that Mr. Howard is always especially happy. For instance when he says: "Dewey's interpretation of Green's ideal self is far from satisfactory, largely because of its lack of insight and appreciation. . . . His acquaintanceship with Green seems to have been formal from the beginning, never intimate" (p. 46). There seems to be an underestimate of Dewey's understanding of Green, and a failure to appreciate the motive which led Dewey to give up Green as his master in moral theory.

The brevity of Howard's criticisms of Dewey, all based on the idealistic position, makes it difficult sometimes to understand the point he wishes to make. The reader has often to refresh his memory of Bosanquet's *Logic* before he can see what the critic is driving at, and not always can he do this then. In way of criticism either too much or too little is often said.

Even the correctness of the statement of Dewey's own position is not always free from question. For instance, when in dealing with "Later Developments" Howard tells us that Dewey "does not distinguish, as carefully as he might, between knowledge as inference, and knowledge as perceptual awareness" (p. 107), he is likely to mislead or else to provoke the retort that Dewey is not understood; for Dewey for many years has distinguished between knowledge as instrument (inference?) and perception as *neither* knowledge *nor* awareness.

But no work in philosophy can completely satisfy a man who does not

occupy the position from which it is written. The real question is whether the work undertaken is well done and worth doing; the answer in the present case is a decided "Yes."

EVANDER BRADLEY MCGILVARY.

UNIVERSITY OF WISCONSIN.

The Next Step in Religion. An Essay toward the Coming Renaissance. By ROY WOOD SELLARS. New York, The Macmillan Co., 1918.—pp. vii, 228.

The time is ripe, the author believes, for a great step forward in the evolution of religion. As the title suggests, the book is a statement of the author's conviction as to what this next step will be. He says: "What I write here is in its way a confession of faith. The values and loyalties which I shall proclaim as true, redemptive and invigorating are those which my own life and critical reflection have selected. In them I see the possibility of high spiritual attainment" (p. 3). The "values and loyalties" referred to include "humanitarianism," "constructive reform," "social democracy," and the like. Individuals must be afforded opportunity for education, contact with beautiful things, and the stimulus of association with great causes. With such values as these in mind, 'religion' is defined as "loyalty to the values of life," the "spiritual" as "man at his best, man loving, daring, creating, fighting loyally and courageously for causes dear to him," and 'salvation' as "the loyal union of a man with those values of life which have come within his ken" (pp. 7–9).

Religion must be purged of every trace of 'supernaturalism.' This term includes, not only the miracles and plenary inspiration in which our fathers believed, and the conceptions of an ethical God and personal immortality held by religious liberals to-day, but apparently all beliefs in an idealistic or teleological world order in which values are conserved in any other manner than through human agency. If it be asked, whether it is justifiable to retain the word 'religion' when its ancient setting has been so completely discarded, the author calls attention to the fact that we commonly speak of a man having made a religion of some interest into which he has thrown himself wholeheartedly, as when we say a socialist has made a religion of socialism, a social reformer of his work of constructive philanthropy, and an artist of his art. Such a man is "filled with the spirit of consuming loyalty to what he values. . . . I think that this spirit and attitude is coming to be called religious, no manner to what objects it attaches itself. . . . Morality is too cold a word in the ears of most men. Besides, moral values are only a part of the immense throng of appreciations to which man responds. There is need of a comprehensive term, able to take in all those interests and activities which give life its variety and glory. Is there a better term than religion?" (p. 221).

As this book is a "confession of faith," and not a systematic philosophical argument, specialists will understand that the author's numerous assertions upon the outcome of research and controversy in the fields of anthropology, natural science, Biblical criticism, comparative religion, psychology and the new realism in their bearings upon religion are merely intended to be his own

personal feelings and convictions. In stating a mere "confession of faith" a man need cite no authorities other than his own writings. However, as the book is popular in its aim and scope, and will probably chiefly fall into the hands of those whose acquaintance with the literature of these fields is slight, the author really ought to have informed his readers that there exist scientific and philosophical students, as learned as he, who have come to radically different conclusions upon almost everything that he says, as well as others who are more or less in agreement with him.

WILLIAM KELLEY WRIGHT.

DARTMOUTH COLLEGE.

Liberty and Democracy and Other Essays in War-time. By HARTLEY BURR ALEXANDER. Boston, Marshall Jones Company, 1918.—pp. x, 229.

The essays collected under this somewhat general title are republished from a number of periodicals and vary considerably in length, interest, and importance. The manner varies but all are inspired by the author's reflection upon the problems raised by the War and his convictions regarding the issues at stake in it. The book has, therefore, a sufficient unity.

No merit of novelty can be claimed for the author's interpretation of the issue of the War; in fact, he makes no such claim. The struggle, as he sees it, was between justice and force, between an order of law founded on rational, self-controlled freedom on the one hand, and an order of hierarchical subordination on the other. But if not novel, the author's views are presented interestingly and in a manner to provoke thought. For he conceives the situation not as a rudimentary struggle between good and evil but rather as the occasion for a clarification, by severe thinking, of the ethical principles upon which political liberty has been supposed to rest. The book is a call to the American public to analyze its ideals and to understand more deeply the political goods which a lazy-minded democracy supposes that it has mastered and realized. As an incentive to popular philosophical thought of this kind, the book has real merit. It is a good interpretation of what the War meant to many Americans who sought to understand the more speculative issues.

With the close of the War a perhaps inevitable reaction has come. Liberty and democracy seem rather vague in the welter of concrete interests and issues. Perhaps one has become a little sceptical and disillusioned; perhaps one is only tired. But the mood of conviction gives place to the mood of criticism. One wonders how much of what we thought we were fighting for was effective ideal and how much was propaganda and camouflage for more sinister designs. In this mood it is hard to do justice to Professor Alexander's book. But the mood of faith will return and then the perennial interest in these ideals will revive. In any case, the book should remain an interesting account of what a considerable number of Americans considered to be the ultimate issues of the great struggle.

GEORGE H. SABINE.

THE UNIVERSITY OF MISSOURI.

The following books also have been received:

Moral Values and the Idea of God. The Gifford Lectures Delivered in the University of Aberdeen in 1914 and 1915. By W. R. SORLEY. Cambridge: at the University Press; New York: G. P. Putnam's Sons, 1919.—pp. xix, 534.

Rousseau and Romanticism. By IRVING BABBITT. Boston and New York, Houghton Mifflin Company, 1919.—pp. xxiii, 426.

Knowledge, Life and Reality. An Essay in Systematic Philosophy. By GEORGE TRUMBULL LADD. New Haven, Yale University Press, 1918.—pp. 549.

The Soul in Suffering. A Practical Application of Spiritual Truths. By ROBERT S. CARROLL, M.D. New York, The Macmillan Company, 1919.—pp. 241.

The Beginnings of Science. By EDWARD J. MENGE. Boston, Richard G. Badger, 1919.—pp. 256.

Backgrounds for Social Workers. By EDWARD J. MENGE. Boston, Richard G. Badger, 1919.—pp. 214.

A Survey of Symbolic Logic. By C. I. LEWIS. University of California Press, Berkeley, 1918.—pp. vi, 406.

Philosophical Currents of the Present Day. By LUDWIG STEIN. Translated by SHISHIRKUMAR MAITRA. Vol. I. Published by the University of Calcutta, 1918.—pp. xvi, 234.

Progress of Education in India, 1912–1917. By H. SHARP. Seventh Quinquennial Review. Vol. I. Calcutta, Superintendent Government Printing, India, 1918.—pp. ii, 215.

La Philosophie Contemporaine en France. Essai de Classification des Doctrines. Par D. PARODI. Paris, Félix Alcan, 1919.—pp. vi, 502.

L'Idée de Finalité. Finalité Générale et Finalité Individuelle. Par. A. DE GRAMONT-LESPARRE. Paris, Félix Alcan, 1916.—pp. 159.

De L'Inconscient au Conscient. Par GUSTAVE GELEY. Paris, Félix Alcan, 1919.—pp. xiii, 346.

Le Ceneri di Lovanio e la Filosofia di Tamerlano. Per MICHEL-ANGELO BILLIA. Milano, Libreria Editrice Milanese, 1916.—pp. 85.

Lo Spirito Evangelico di Roberto Ardigò. Per GIOVANNI MARCHESINI. Bologna, Nicola Zanichelli.—pp. 123.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology*; *Ar. de Ps.* = *Archives de Psychologie*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*; *Br. J. Ps.* = *The British Journal of Psychology*; *Int. J. E.* = *International Journal of Ethics*; *J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods*; *J. de Psych.* = *Journal de Psychologie*; *Psych. Bul.* = *Psychological Bulletin*; *Psych. Rev.* = *Psychological Review*; *Rev. de Mèt.* = *Revue de Mètaphysique et de Morale*; *Rev. Nèo-Sc.* = *Revue Nèo-Scolastique*; *Rev. Ph.* = *Revue Philosophique*; *Rev. de Ph.* = *Revue de Philosophie*; *R. d. Fil.* = *Rivista di Filosofia*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Psych.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane, I. Abtl. Zeitschrift für Psychologie.* —Other titles are self-explanatory.]

La Psychologie, ses divers objets et ses méthodes. ANDRÉ LALANDE. Rev. Ph., XLIV, 3, 4, pp. 177–221.

The independent status which seemed assured to psychology during the period between 1881–1903 has been threatened by two great influences: (1) analysis has revealed the importance of intuition and immediate feelings. Bergson identifies human and even comparative psychology with metaphysics, and James, though at first a partisan of a strictly 'scientific' psychology, in 1907, greatly modified this earlier point of view; (2) by the influence of sociology, especially the works and teaching of Durkheim, who declares that social life depends upon psychical processes that are inseparable from judgments of value or philosophic problems in general. But what we really call psychology consists of several types of research, distinct both in aim and method. (1) Psychology, undertaken as a study of physiological behaviorism, regards the conduct of all living creatures as explained by an immense number of definite, delicate and varied reflexes which are displaced, associated, facilitated or inhibited during the course of 'experience.' From this standpoint, the modification of these reflexes is regarded as the sole problem of psychology, the method being capable of a varied and extended application in the field of education and in all sorts of acquired associations. (2) Another type of psychology deals with consciousness, its desires, pains and fatigues. It also examines the conscious idea of the presence of others—of their feelings and intentions which play an important rôle in mental life and attitude. Furthermore, it should examine questions of fact in the consideration of moral value. (3) Still another type of psychology would consist in the investigation of the elements of experience in their relation to a subject or thinking person, and in certain cases to thought in general. The distinction between the actual psychological process, such as pain, and the idea which the process

provokes in consciousness, reflective psychology, involves this third type of research, and necessitates an analysis of the general conditions of consciousness. Thinking implies certain forms of affirmation, negation, identity, difference, time, space, order, number and necessity of which the relations and precise significance must be determined. This type of psychology does not apply to things but to the act by which things are thought. (4) Finally, an ontological or metaphysical psychology would concern itself with a general view of the relations of man and nature. For since no one knows where metaphysics begins and positive science ends, to proscribe metaphysic would be arresting an investigation which may prove both interesting and fruitful psychologically.

As regards psychological methods, we find first of all, that though the introspective method involves many difficulties, it is quite legitimate. It consists in determining the nature of psychical processes through the description which the subject gives under controlled conditions, instead of merely attending to the physical response or reaction that he manifests. Thus in comparing two weights, we do not care to determine the exact quantitative relation of the comparison so much as the attitude of mind under which the observer made the comparison. Binet declares that introspection has revealed an indefinite number of states of consciousnesses: consciousness of relations, intellectual feelings, mental attitudes, tendencies, etc. By way of introduction to pathological and psycho-analytic methods, the author declares that mental pathology for fifteen years has been the principal factor involved in the progress of psychology. It is the point of view which has determined the distinct stages of psychological life and the rôle played by images, ideas, emotions, and tendencies in the constitution of the personality. Above all, in establishing certain distinct types of insanity, it has greatly contributed to the comprehending and bringing together of many facts of normal general psychology. Dr. Freud, while still employing the psycho-analytic method of questioning in pathological cases, has renounced hypnosis as a means of procedure and confines himself to asking questions habitually attitudinized by the patients; by observing the remarks, intonations, attitudes and involuntary gestures which the patient assumes in replying to questions while in a natural and unaffected frame of mind; by an analysis of dreams which Freud considers to be the true revealers of intense desires, habitually repressed as undesirable or revolting. But this method of interrogation and observation, oriented by a search for repressed 'complexes,' is very much exposed to the dangers of suggestion. The cures which it effects are often explicable by far simpler psychological phenomena than those generally named by Freud. An attempt at interpretation, however, is a step which has great value in the endeavor to discover the real significance of images and in the establishment of a general system of normal and pathological psychology. Another guiding principle for scientific analysis is the observation of the development and normal evolution of the human mind whose various stages appear to be homogeneously grouped or related: by observing the phenomenal progress of the infant; by examining the succes-

sive transformations of consciousness historically; or finally, by analyzing the actual peoples found in different degrees of civilization, assuming that the most simple type of savagery represents the oldest and most primitive form of racial psychology. These genetic methods propose to explain mental functions by their genesis rather than by describing the actual relations present at any particular moment. This method has certainly given rise to very novel as well as suggestive concepts, but the greatest precautions are necessary if we wish to escape illusions. It generally involves the assumption of a simple and uniform primitive state of mind common to all races. But the facts do not give any support to this hypothesis, and appear to modify it in many respects. What we almost always meet with in the oldest forms of a religion or language is a multiplicity of forms which progress or evolve either by elimination or assimilation. Another illusion is that the present mental state of a non-civilized people can furnish us *a priori* with an irrefragable representation of its past mental attitude. It is also very dangerous in genetic psychology to reconstitute a series of hypothetical stages whose order is not directly known and furnished by chronological determinations. Reality when properly observed almost never presents this regular series. The celebrated formula that ontogenesis is a reproduction of phylogenesis cannot be admitted; the action of heredity and environment entirely changes the conditions of the phenomena. The psycho-physical method, involving the concepts of an absolute and differential limen of sensation, proportional to the stimulus, consists in varying the stimulus to discover the difference limen for any given series of sensations. The four principal methods employed are the method of just noticeable differences, the method of gradation, the method of true and false cases and the method of mean errors. The results obtained are criticized because the numerical units so furnished cannot be interpolated by a simple formula and also on the ground that sensation does not satisfy the general conditions of measurable magnitudes. It is also noticeable that nothing guarantees the equality of just noticeable differences of sensation, for that is to confound a numerical series with a series of increasing values of a given variable.

EDGAR DE LASKI.

Claude Bernard et l'esprit expérimental. R. LENOIR. Rev. Ph., XLIV, 1–2, pp. 72–101.

Claude Bernard freed physiology from metaphysics and vitalism. By his discoveries and by the invention of a new technique he helped forward the method of experimentation, and showed that without the experimental spirit experiment is nothing. His conception of science sprang from an historical, psychological method analogous to the positive method of Comte. He raised empiricism to experimental rationalism by showing that experience only acquires its full sense when logic is introduced into the study of facts to establish the relations between them. The formal conditions which assure the validity of phenomena are furnished by reason. The assumption of the

uniformity of natural law is such a rational presupposition, for upon it all prediction and action upon phenomena depend. Science rests on the principle of determinism. Bernard thought that besides the facts of experience and reason, there is a directive, creative idea, which he called sentiment or intuition. This is the essence of the scientific spirit. It is unlike other intuitions in that here imagination and belief are separated. The intuition of the scientist is a state of doubt, of suspended judgment; it involves faith in science and distrust of self. Bernard means nothing mysterious by this intuition; he has simply described the psychological attitude of scientific thought. Also when he describes himself as a vitalist, Bernard does not mean the old vitalism or neo-vitalism. He does not conceive vital action to be something in its essence which escapes science. A vital mechanism is only a mechanism of a *particular sort*. In uniting physiological elements, properties appear which were not appreciable in the separate elements. We call vital those properties of the organism not yet reduced to physico-chemical terms. Though the 'vital synthesis' has not yet been solved by science, it will be some day. The mechanism of the organism must be studied in the living, and not by a procedure which destroys the phenomenon before explaining it. Bernard freed biology from metaphysical theorizing by narrowing it to the study of the physico-chemical conditions of life. He made clear the sense in which science can admit the uniqueness of vital phenomena without falling into a vitalism that relinquishes the principle of determinism. He recognized the autonomy of the anatomical elements to be an essential postulate of physiology. The solution of the problems of vital phenomena is to be looked for in the anatomical element and in the living cell. The present epoch seems absorbed in the individual, the particular. Bernard has apparently asserted in vain that experience deprived of its intellectual elements is nothing but empiricism.

MARIE T. COLLINS.

Causality, Induction, and Probability. P. E. B. JOURDAIN. Mind, N. S., XXVIII, 110, pp. 162–180.

Mach has shown that the concept of cause can be replaced by the mathematical concept of function, that the law of causality is an *a priori* postulate of science. In a previous work Jourdain has tried to show that causality is a problem of extrapolation which depends on the nature of the functions assumed, and has no reference to the notion of probability. In his *Principles of Mathematics*, Russell has supported the view that the foundations of physics are concerned with the determination of the nature of certain functions so as to make possible the validity of the law of causality. In his later works, however, he emphasizes the "inductive principle" as a foundation for the law of causality, implying that Jourdain does not go to the root of the matter. But the law of causality is an *a priori* principle which is more fundamental than induction and mere probability. The notion of causality appears in the notion of probability, and therefore cannot be defined in terms of probability. There may not be any principle of causality, but if such does exist

it must be *a priori*. It is impossible to determine a law from a finite number of observations.

ISRAEL CHASMAN.

The Syllogism and Other Logical Forms. H. S. SHELTON. Mind, N. S., XXVIII, 110, pp. 180–203.

The aim of this essay is to offer "a methodological description of the process of formal reasoning as applied to material reality." Deduction involves three processes. First, there is the abstracting from reality the concepts of the aspect with which we are dealing. A deduction is valid only with regard to the concept used. Secondly, there is the reasoning with regard to these concepts by means of some universal rule. We make a deduction only because, consciously or unconsciously, we consider some principle to be absolutely or universally true. Thirdly, the conclusion is referred back to reality. The conclusion is materially true only after having been referred back and empirically verified. The syllogism should be accepted as the standard mode of formal logic. Only that which is formally stated can have any place in logic, and all arguments *can* be expressed syllogistically. Some subsidiary forms are developed from the syllogism. All deductive reasoning is and must be formal. Formal deductive logic should be disentangled from the psychological and metaphysical discussions with which it has been associated.

ISRAEL CHASMAN.

Logic As the Science of the Pure Concept. G. A. TAWNEY, J. of Ph., Psy., and Sci. Meth., XVI, 7, pp. 169–180.

The article offers a critical exposition of Croce's *Logic as the Science of the Pure Concept.* In this work the pure concept and perception, philosophy and history are identified. The *Ding an sich* and the transcendental ego are rejected. The following equation is introduced: Philosophy = thought = history = perception of reality. Every philosophy must be at basis idealism. But Croce is not an idealist in the Platonic sense. His reality is that of perception. No hypothesis can be philosophical that is not thinkable as an idea. Philosophy is the doctrine of the categories. So far as the truths of science, industry, commerce, and morality are concerned, his doctrine is pragmatic. The task of the empirical sciences is classification, and that is dominated by practical motives. The law of thought proceeds on the principle of identity and contradiction: A is A *and* A is not-B. His theory of knowledge reduces itself to the following: "There are two pure theoretic forms, the intuition and the concept, the second of which is subdivided into judgment of definition and individual judgment, and there are two modes of practical elaboration of knowledge, or of formation of pseudo-concepts, the empirical concept and the abstract concept, from which are derived the two subforms of judgment of classification and judgment of enumeration." Error, he believes, is the substitution of the practical act of the spirit for a theoretical act, the uttering of sounds to which there corresponds no thought. It might be successful

and rational, but cannot be morally good. Error is an improper combination of ideas.

ISRAEL CHASMAN.

Critique de Moi-Même. BENEDETTO CROCE. Rev. de Mét., XXVI, 1, pp. 1–40.

It is not Croce's purpose in this small essay to write confessions or recollections or memoirs. This is a critique of himself, wherein he sets forth briefly the story of his studies and contributions to human learning.

As a child, he had a great love for all sorts of tales. His greatest enjoyment lay in the reading of books; and in this he was helped by his mother. At nine he entered a Catholic college. The moral and religious education there was free from superstition and fanaticism. So far he knew nothing about politics. Soon after, he came to dislike all party politics, rhetoric, and oratory. His chief interest was in literature and history. He suffered greatly from waves of desire for the ascetic and deeply religious life. But this did not hinder his studies. In his classes he was always among the first. During the last years at this college the director gave some lectures on the philosophy of religion. As a result of these lectures young Croce was thrown into a religious crisis, and came out freed from religious beliefs. About the same time his reading bore fruit. He was inspired to write some critical essays, which appeared in a literary journal in 1882. He later revised these and published them in pamphlet form under the title, *The First Step.*

Then came the earthquake of Casamicciola, which robbed him of his parents and only sister. He was himself hurt under the ruins. When he recovered from the bruises, he went, together with his brother, into the home of Silvio Spaventa, who became their guardian. This led him into political surroundings. Being totally ignorant of politics, his life became exceedingly miserable. His delicate constitution grew even more frail. These were his most sorrowful years. Nor did his study of law at the University make his existence any happier. He left without even taking the examinations, having all this while preferred poring over books in the libraries to attending to his texts. He became interested in the moral philosophy of Antonio Labriola, and many of the ideas of that book he later incorporated in his *Philosophy of the Practical.* His studies in Labriola were followed by a period of pessimism. He wrote much, and published his pamphlet entitled *Juvenilia.*

It was in 1886 that he returned to Naples. Here he was much happier. He determined to devote his life to scholarly research. He began to see the philosophical aspect of things. He read the German philosophers, but could not understand them, and was discouraged. For six years he turned all of his attention to study, and it was during these years that he wrote most of his essays later published in his *Neapolitan Revolution of 1799.* He also wrote *Playhouses of Naples from the Renaissance to the End of the Eighteenth Century,* some of the essays comprising *The Literature of the Eighteenth Century,* and other essays which formed a series of *Historical Curiosities.* He also began the publication of a *Neapolitan Literary Library,* and, with some friends, the

Napoli Nobilissima. The value of these works toward his own growth was twofold. First, his childish dreams of literature and research were satisfied, and he was forced into strong mental and physical discipline. But the chief value of these works was a negative one. Just when he was hailed by critics as a creator of *la bonne littérature italienne*, he became averse to this *bonne littérature*. The publication of these works made him feel as if he had closed a period of his life. Henceforth he wanted to be concerned only with the deeper, more serious aspects of life. But what were the deeper aspects of life? He was not sure. At any rate he determined to make a study of the sentiments and spiritual life of the Italian people from the Renaissance to the present day. This necessitated a knowledge of the peoples which influenced Italy. It was not long before he was making researches into the nature of history and science. He became interested in the problem of art. After long meditation he wrote his *History Embraced under the General Concept of Art.* This completed, he returned to his historical studies proper. He plunged into and mastered political economy. This bore fruit in a volume of essays: *Historical Materialism and the Economics of Karl Marx.* Then he turned to art, on which he had long desired to write. He had published the *Fundamental Theses of an Esthetic As a Science of Expression and General Linguistics.* These labors on art culminated in the *Esthetic*, which appeared in 1902. But the *Esthetic* raised numerous other problems to which he now devoted his attention.

In 1900 he had come in close relationship with Gentile. With the aid of the latter Croce founded in 1903 *La Critica*, a magazine devoted to a review of history, literature, and philosophy. This marks the period of his maturity in thought,—the union of the theoretical with the practical. He believes that it is in directing and contributing to *La Critica* that he rendered the greatest service to Italian culture. At the same time Croce did not neglect his studies. Beside publishing collections of Italian works, he succeeded in publishing in 1905 his first sketch of the *Logic.* In 1906, he published *What Is Living and What Is Dead of the Philosophy of Hegel;* in 1907, the *Philosophy of Right As Economic;* in 1908, the *Philosophy of the Practical;* in 1909, the *Logic* under a developed form; in 1910, the *Problems of Esthetics;* in 1911, a monograph on *Vice;* in 1912, the *Theory of Historiography;* in 1913, the *Breviary of Esthetics.* Beside these, he completed *The Italian Historiography from the Beginning of the Nineteenth Century Until To-day*, and numerous smaller monographs.

The last twelve years have been the most fruitful. He solved his difficulties, and achieved internal serenity. It is the period when he learned most and created most. From *De Sanctis* he learned that art is not a work of reflection or logic, or a product of skill; but that in its spontaneity and purity, it is a form of the imagination. In his early years his philosophy came to take on a sort of Platonic-Scholastic Herbartianism. That served as a protection against the Naturalism and Materialism which dominated the days of his youth, and rendered him immune from the sensualism which was coming into style under the leadership of D'Annunzio. But he was not influenced by

D'Annunzio. Nor was he influenced by the Hegelian, Spaventa. While Spaventa was interested almost wholly in the theological-philosophical problems of the relation between Being and Knowing, transcendence and immanence, Croce was moved to philosophy by his interest in the problems of art, the moral life, of right, and later, the historical method. Spaventa could not have influenced him because their minds are of totally different types. D'Annunzio could not have influenced him because he is a contemporary of Croce.

Age has brought with it maturity of thought and calmness of spirit. The perplexing problems and dissatisfied solutions of his earlier life have ended in satisfactory solutions, a faith in himself and in the ability of man in attaining truth. The reception which his works have received all over the world have brought him contentment and peace.

ISRAEL CHASMAN.

Esthétique et Memoire. EUGENE D'EICHTHAL. Rev. Ph., XLIV, 2, 3, pp. 222–250.

The source of beauty is in our sensation of physical well-being, while the memory which, like all organic functions, must exercise, rest, conserve and develop itself, transforms these sensations of well-being into rudimentary æsthetic appreciation. The affirmation of the existence of rhythms and various symmetrical forms is itself the proof of the functioning of the memory in æsthetic. The waves of the sea, the march or gallop of certain animals and the beating of the wings of certain birds furnish examples of natural rhythms. The memory which recalls the multifarious organic forms of æsthetic expression is the faculty of relating the impressions of our sense organs to past impressions. It also plays an associational rôle by attaching to the sensorial perception all sorts of ideas and images. The memory is thus the consummation in time and space of a unity of elements which concur by means of the relations involved to give us a completely satisfying impression of the *ensemble* present to sense-perception. This consummation gives birth to a feeling of satisfaction which constitutes an æsthetic realization. Beauty presupposes certitude attested by the memory and is thus understood by the finest artists and critics. A thing is beautiful because of its characteristic of perfection, and so little by little moral considerations are related to the appreciation of beauty. For beauty seems incomplete when not associated with majesty or gravity or perhaps with a certain passion or moral disquietude. The appreciation of a work of beauty is not possible without a preliminary training of the memory which reunites and solidifies the elements and organizes them into a unity. Observations indicate that the memory does not exercise itself with the same rapidity, the same application or the same specialization in all mankind. There are singular inequalities in the power of æsthetic appreciation in various individuals. Some do not appear to know how to use their eyes and ears in constructing or discovering a source of harmony or beauty. Others appear to have this faculty of æsthetic memory

innately developed, and also creating in others the taste for art which they themselves have felt. The current of sympathy between creative work in art and its public appreciation is very often a great source of pleasure for both, depending on the one hand on the love of admiration and fame, and on the pleasure of the æsthetic feeling on the other. Memory, which is one of the principal causes for the permanency of the rules that regulate art, is fundamentally necessary to an appreciation of an æsthetic object.

EDGAR DE LASKI.

Ernest Renan et la Philosophie Contemporaine. D. PARODI. Rev. de Mét., XXVI, 1, pp. 41–66.

Renan's superb literary talent has been injurious to his importance as a philosopher. In his views he seems to stand between Comte and Bergson. In *The Future of Science* he speaks as a positivist. His faith in science is immeasurable. This faith he never lost. In 1890 he wrote: "I was therefore right at the beginning of my intellectual career in believing firmly in science and in taking it for the goal of my life. If I were to begin over I would do the same thing again." But he attributes to science a religious function. Science has a religious value because its conception of life is serious. The spirit of atheism is a frivolous one. Science is the true modern religion. Renan really introduces the romantic German philosophy into French science. His standpoint is distinctly historical. In *The Origin of Language* he holds that languages do not come from a common root, as had been supposed, and the further back one goes the more diversity one finds. Like Comte, he too has three laws of progress. Syncretism, or the first view of things, is comprehensive, but obscure and inexact. This is followed by analysis, or the state of precise distinctions and discussions. But as yet we have no unity. That is produced by synthesis, which unites the power of the intuition with scientific clearness. The first state is religious; the intermediate state is irreligious but scientific; while the last state is both religious and scientific. Truth is continuous progress. The results of the moral sciences reduce themselves to history. Our time is historical, not metaphysical. All sciences are at bottom only diverse forms of history. Nothing is static in nature; everything is in perpetual development. The very laws of nature apply only to the actual state of things. The universe has an ideal goal, which is that reason should rule. The term God is used in two senses; as the category of the ideal; and as synonymous with the whole of existence. The divine is revealed in us not only through religion and science, but also by art and morality. The end of humanity is intellectual and moral perfection.

ISRAEL CHASMAN.

A Sketch of the Philosophy of Religion, with Illustrations of Critical Monism. DOUGLAS CLYDE MACINTOSH. Mind, N. S., XXVIII, 110, pp. 129–162.

Neither idealistic monism, rationalistic monism, nor epistemological dualism can stand the test of experience. What is needed is a critical monism, *i. e.*, a philosophy which seeks to be monistic while at the same time it remains

critical and takes account of experienced fact. This may be applied to religion. The final test of religion is its intellectual value. Here God, as a dependable Power discovered through a religious attitude, is of direct acquaintance to the religious man. Truth is attained when the predicate is practically identical with the subject matter about which the judgment is made. The empirical results of empirical science should be synthesized, and theology included. Thus metaphysics and theology become necessary to each other. The method of critical monism is to be applied to the problems of matter and mind, law and freedom, evolution and creation, mechanism and purpose, nature and the supernatural, the one and the many, and good and evil.

ISRAEL CHASMAN.

"Scientific Prepossession" and Antiscientific Animus. KNIGHT DUNLAP. J. of Ph., Psy., and Sci. Meth., XVI, 6, pp. 156–160.

The feature which Professor Fite finds most objectionable in psychology is its demand for scientific proof, as against conjecture, popular report, and anecdote. All the apostles of the Easy Way protest that it is silly to insist on scientific demonstration of the phenomena, which they declare they have observed by merely "keeping the eyes of the mind open." Scientific method does not accept a mere statement of what is believed to have happened; it demands an arrangement of the conditions under which it happened, and also requires a statement of conditions under which it may be repeated. The practical accomplishments of psychologists through scientific methods in the various branches of the army and navy, will be found in their reports. Psychology deals with the mind, and with the physical and psychological phenomena which are closely connected with the mind. So psychological research finds its work not so much in extending the field of human knowledge, as in bringing order out of chaos within its field. Psychology will always be dull to those who have not the 'scientific prepossession,'—the prepossession that no labor is too hard if it lends to the ascertainment of truth.

EMILY A. LANE.

Prediction and Spontaneity. A. A. MERRILL. J. of Ph., Psy., and Sci. Meth., XVI, 6, pp. 161–162.

The two functions of the intellect are 'to describe' and 'to reason.' The difference between the two is that the former relates to that which we have experienced, while the latter means to go from that which we have experienced to that which we have not experienced. We describe the past and predict the future. Since prediction involves the passing of time, this passing of time must not introduce any cause not known at the time of prediction; otherwise the effect cannot be predicted because all the causes are not known. A spontaneous act is an act, all of the causes of which do not come into existence until the very instant of the act. Clearly such an act cannot be predicted. To predict one must know all the causes. And if we did this we could not predict the act, we could only describe it, because it would then belong to the past. Prediction is most accurate in the sciences of logic, mathematics,

astronomy and physics; and is least accurate in biology, political economy, sociology and history. In the latter sciences, which deal with the living, spontaneity is bound to enter and spoil predictions, because the time between a prediction and the phenomenon predicted cannot be ignored without destroying the accuracy of the prediction. EMILY A. LANE.

La "Pédagogie" de Rousseau. É. DURKHEIM. Rev. de Mét., XXVI, 2, pp. 153–180.

The educator, Rousseau says, must take nature as a guide. The reasons are that the child is man in the state of nature and that nature furnishes a norm that is not arbitrary but may be observed and studied. Thus if pedagogy adopts such a standard, it becomes less subjective. Although Rousseau believes that a child is intrinsically good, he does not on that account adopt a *laissez faire* pedagogical doctrine. Indeed, no one has felt more keenly than he the necessity for education, nor has anyone had a more exalted opinion of what might be accomplished by it in transforming the nature of the child and putting him in harmony with his environment. To bring about this adjustment the educator should seek to establish equilibrium between the child's desires and his capabilities. Education must, therefore, become a science and a study of the nature of the child. This psychological emphasis of Rousseau's pedagogy is an important innovation. Nature teaches us two main things concerning education: the fundamental needs of the child can be satisfied only by being allowed to develop freely; yet man is a civil being and, as such, must feel the yoke of necessity. The feeling of restraint should be imposed, not by education, but by physical things. Commands cannot properly give this feeling of necessity, for they represent the demand that a certain act be performed, not because of its necessity, but because it has been commanded. The child will accept a restraint that results from the physical nature of things. He should not be punished but should feel the physical consequences of his acts. It follows from all this that a child should live in an environment of things. The master should impose his will on the child through the manipulation of things, but this manipulation must be according to law. A direct relation between master and pupil is, however, sometimes inevitable, but even then the manifestation of the master's will should have the character of a manifestation of nature. This educational doctrine has been characterized by Rousseau as negative because it excludes man and society. It limits the nature of the child by things only during the first twelve years, which is the most important period in life; the young child can best be influenced through physical objects, for they will arouse his imagination and serve as instruments of culture. Yet the child cannot avoid contact with man and hence there must be some ethical instruction. This should be given through the medium of the forces which play on life and not through precept. The child should be taught his rights and duties by being instructed at first concerning what is originally implied in the right of property. Then he can be led to respect the rights of others and thus will come to respect the social bond.

MARJORIE S. HARRIS.

NOTES.

Professor A. S. Pringle-Pattison has resigned the chair of Logic and Metaphysics in the University of Edinburgh, which he has held since 1891. Before that he had been professor for four years at St. Andrews and for four years at University College, Cardiff.

Professor Norman Kemp Smith of Princeton University has been elected to the chair of Logic and Metaphysics in the University of Edinburgh in succession to Professor A. S. Pringle-Pattison.

Dr. James Drever, Lecturer in Education in the University of Edinburgh, has been appointed to the Combe Lectureship in Psychology, left vacant by the death of Dr. W. J. Smith.

Dr. W. Curtis Swabey has been appointed Instructor in Philosophy at The Rice Institute, Houston, Texas.

Dr. Marie T. Collins has been appointed Instructor in Philosophy at Wells College.

Dr. Ethel Gordon Muir of Wilson College has been appointed Professor of Philosophy in Lake Erie College.

We give below a list of articles in current magazines:

MIND, XXVIII, 110: *D. C. Macintosh*, A Sketch of the Philosophy of Religion, with Illustrations of Critical Monism; *P. E. B. Jourdain*, Causality, Induction, and Probability; *H. S. Shelton*, The Syllogism and other Logical Forms.

AMERICAN JOURNAL OF PSYCHOLOGY, XXX, 2: In Memoriam. John Wallace Baird; *Gilbert J. Rich*, A Study of Tonal Attributes; *P. F. Swindle*, Some Forms of Natural Training to which Certain Birds are Subjected; *P. F. Swindle*, Analysis of Nesting Activities; *P. F. Swindle*, The Peristaltic-Like Nature of Organic Responses; *G. Stanley Hall*, Some Relations Between the War and Psychology; *Frank Angell*, Duration, Energy, and Extent of Reaction Movements.

THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS: XVI, 8: *James M. Leuba*, The Yoga System of Mental Concentration and Religious Mysticism; *John Warbeke*, A Medieval Aspect of Pragmatism; *William M. Salter*, Mr. Marshall on Outer-World Objects.

XVI, 9: *Alfred H. Lloyd*, Luther and Machiavelli: Kant and Frederick; *J. R. Kantor*, Human Personality and Its Pathology.

XVI, 10: *Hartley B. Alexander*, Wrath and Ruth; *Wesley Raymond Wells*, The Biological Foundations of Belief; *Elsie Clews Parsons*, Teshlativa at Zuni.

XVI, 11; *H. T. Costello*, The Value of False Philosophies; *S. A. Elkus*, Purpose as a Conscious Concept; *Grace A. de Laguna*, "Dualism and Animal Psychology:" A Rejoinder.

XVI, 12; *J. H. Randall, Jr.*, Instrumentalism and Myth; *Wilson D. Wallis*, The Objectivity of Pleasure; *W. H. Sheldon*, Dr. Goldenweiser and Historical Indeterminism.

PSYCHOLOGICAL REVIEW, XXVI, 2: *Robert M. Yerkes*, Report of the Psychology Committee of the National Research Council; *C. E. Ferree* and *Gertrude Rand*, Chromatic Thresholds of Sensation from Center to Periphery of the Retina and their Bearing on Color Theory. Part II.

THE INTERNATIONAL JOURNAL OF ETHICS, XXIX, 3: *C. Delisle Burns*, De Ecclesia; *Alfred H. Lloyd*, When Gods are Born; *John M. Mecklin*, The International Conscience; *M. W. Robieson*, The Theory of Morals on a Class Basis; *Wilbur M. Urban*, How are Moral Judgments on Groups and Associations Possible?; *Richard Roberts*, The Problems of Conscience; *Durant Drake*, Will the League of Nations Work?; *E. C. Moore*, Educational Reconstruction; *Margaret Jourdain*, The Victorian Spirit.

THE AMERICAN JOURNAL OF THEOLOGY, XXIII, 2: *George Cross*, Federation of the Christian Churches in America—An Interpretation; *J. Warshauer*, Jesus as a Teacher: Toward an Interpretation; *Herbert L. Stewart*, Lord Morley's Relation to History, to Theology, and to the Churches; *Charles C. Torrey*, Fact and Fancy in Theories Concerning Acts (Concluded); *A Wakefield Slaten*, The Qualitative Use of NOMOΣ in the Pauline Epistles.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XXVI, 2: *É. Durkheim*, La "Pédagogie" de Rousseau; *G. Davy*, Émile Durkheim: I. L'Homme; *F. Michaud*, La Dégradation de l'Énergie et le Principe de Carnot.

XXVI, 3: *G. Milhaud*, La Question de la sincérité de Descartes; *A. Reymond*, Sur une définition possible des Ordinaux transfinis; *É. Bourguet*, Sur la Composition du "Phèdre"; *R. Lenoir*, La Doctrine de Ravaisson et la Pensée moderne.

REVUE PHILOSOPHIQUE, XLIV, 3 and 4: *A. Lalande*, La psychologie, ses divers objets et ses méthodes; *E. D'Eichthal*, Esthétique et Mémoire. Du rôle de la mémoire dans la perception du Beau réalisé par l'Art; *G. Bohn*, La dynamique cérébrale; *P. Dupont*, L'x objectif conscient.

ARCHIVES DE PSYCHOLOGIE, XVII, (No. 66): *H. Reverdin*, Petite note sur un très petit magicien; *E. Reymond*, Le relâchement musculaire; *Ch. Werner*, XIIIme réunion des Philosophes de la Suisse romande (La loi de relativité).